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Automotive Daily News

CARS · SHOP EQUIPMENT · TRUCKS · AVIATION · PARTS · ACCESSORIES · TIRES

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Continental-De Vaux Speeds Up Production On New De Vaux 80 Line

Three Coupe Types Now Coming Off Line; New Models Have Aero-Line Bodies, With Steel Upper Structure

Grand Rapids, Mich., May 18.—The new Continental-De Vaux models are coming off the production line in constantly increasing numbers. Three coupe models are now in production, the custom coupe with rumble seat, the standard coupe with rumble and the the standard coupe-baggage.

These coupes embody the "aero-line" body lines, carried to the highest degree. Slanting windshields, curved panels, curved reveals and other streamlined units are all designed with an eye to reducing wind resistance to the lowest possible level. A steel upper structure is used on these coupe models in place of the fabric employed last year.

Both sedan and coupes have the airplane cluster location of dash instruments. Drivers' seats are moveable and the steering wheel may be adjusted to suit individual needs.

As an option, at a slightly increased cost, the buyer may have Startix, the automatic key ignition switch. The ride regulators used on these new models is thermostatically controlled, making the adjustment to driving conditions automatic.

The power plant of this new model 80 De Vaux is the eighty horse power Continental, which is claimed to be the most powerful ever used in a low-priced six-cylinder car. Speeds of eighty miles per hour are claimed for the car with this Continental power plant.

Other Pictures on Page 11

GASOLINE STOCKS CONTINUE DECLINE

New York May 18.—Stocks of gasoline held by refineries representing 95.1 per cent. of the country's refining capacity reporting to the American Petroleum Institute again declined last week, totaling 44,798,000 barrels May 14, a drop of 823,000 from the previous week. At the close of the corresponding week in 1931 stocks of gasoline held by reporting refineries totaled 44,970,000 barrels.

Total stocks of gasoline, including refinery, terminal, and transit aggregated 58,912,000 barrels, compared with 59,353,000 barrels a week earlier and 56,334,000 barrels at the end of the like week in 1931.

During the week refineries were operated at 64.4 per cent. of capacity, compared with 59.6 per cent. in the previous week. In the like week of 1931 crude oil runs to stills averaged 68.2 per cent. of capacity.

Cracked gasoline production by stills representing 95.6 per cent. of the country's total charging capacity averaged 477,770 barrels daily, compared with 445,400 barrels daily in the previous week. In the corresponding week of 1931 cracked gasoline production by stills representing 94.9 per cent. of the charging capacity averaged 456,300 barrels daily.

Gas and fuel oil stocks May 14 totaled 124,786,000 barrels, a gain of 337,000 barrels over the previous week.

Imports of crude and refined oils averaged 292,857 barrels daily during the week, compared with 237,143 barrels daily in the previous week.

NATIONAL CONTROL OF OIL OUTPUT URGED BY AMES

San Francisco, May 18.—The problem of overproduction, which has long vexed the petroleum industry, is now contributing a threefold element to the national depression, said C. B. Ames, vice-president of the Texas Company, in an address today, in which he urged an interstate compact to control oil output.

Speaking before the annual meeting of the United States Chamber of Commerce, Mr. Ames declared that overproduction "has depressed the petroleum industry by forcing prices to an unprofitable level. It has depressed the coal industry by displacing coal in uses to which coal is well adapted. It has depressed the railway industry by depriving it of the legitimate coal tonnage."

Vast petroleum surplus above ground, Mr. Ames asserted, has forced the consumption of millions of barrels of fuel oil annually in purposes which could be adequately supplied by coal.

"Much of this fuel oil could be converted into gasoline," Mr. Ames added. "Coal cannot take the place of gasoline. Therefore, the oil, instead of being conserved for its higher uses, is displacing coal at prices below the cost of coal. This is an illustration of the wasteful use of our exhaustible supply."

If production is to be controlled, said Mr. Ames, who is also a director of the American Petroleum Institute and a former judge of the

(Continued on Page 9)

Tax Expert Warns Dealers Of New Federal Revenue Bill

Car Users Would Shoulder One-Seventh of All New Revenue in Addition to Present Staggering Burden

New York, May 18.—One-seventh of the new tax bill will be paid by motor vehicle users if the present tax bill is enacted, and $150,000,000 added to their present annual tax bill, which already exceeds one billion dollars, according to John E. Walker, former special assistant on taxation to the secretary of the Treasury.

This sharp increase in taxes on the use and purchase of automobiles, parts and lubricants, based apparently on false premise that the present day automobile is a luxury rather than a necessity, strikes deeply into the dealers' potential market. Under such a tax, purchasers would defer buying a new car; owners would defer repairs and operators would economize in the use of lubricants. The net result would be a decline in sales of new cars, an increase in the cost of reconditioning used cars, a sacrifice of safety through the failure of owners to have necessary repairs made and a decline in yearly mileage through new economies on the part of operators.

This is a dealer problem as well as a manufacturer's problem, and there is still time for dealers to

(Continued on Page 2)

CAN'T BALANCE BUDGET BY TAXES DEPRESSING INDUSTRY, SAYS CHAPIN

New York, May 18.—Government budgets cannot be balanced by taxes which depress business, asserts Roy D. Chapin, head of the taxation committee of the National Automobile Chamber of Commerce. The automotive industry cannot increase employment if it must add new and discriminatory taxes to its prices, he says.

"We will take our share of any general taxes and do our best, but surely the members of the Senate will not single us out for burdens which will further handicap the 4,000,000 people in every state who obtain their livelihood from the manufacture and use of motor vehicles."

Enlarging upon his theme, Mr. Chapin, who is also chairman of the board for the Hudson Motor Company, added:

"For months the executives in our industry have been straining every effort to encourage buying. We have cut prices to levels which cannot possibly be sustained unless we

(Continued on Page 8)

HAMLIN TO HANDLE DE VAUX IN SOUTHERN CALIFORNIA DISTRICT

Los Angeles, May 18.—Ralph Hamlin, well-known southern California automobile man and head of Franklin Motors, Inc., has been appointed southern California distributor for the De Vaux 80.

For the past twenty-five years Ralph Hamlin has been a dealer in this section. A large modern building is maintained in Los Angeles at 1040 South Flower St., and a like establishment is operating in Pasadena.

Franklin Motors, Inc., has signed dealers in Burbank, Pasadena, Long Beach and San Pedro, all important points in the territory. According to word received from Hamlin, many more dealers will be added during the next week.

Other important points closed for

(Continued on Page 7)

LOUISVILLE SALES DURING MAY SHOW GAINS OVER APRIL

Louisville, Ky., May 18.—New car sales in this city show a good increase in the first half of May as compared with the name period in April, with totals being 235 in the first fifteen days of May, as compared with 197 for the first fifteen days of April.

While these figures indicate that sales for the entire month of May will fall below the total for May last year, dealers and distributors are much encouraged by the results this year. Sales during the first half of April this year show a good increase over the corresponding period in March, with the totals being 197 in April first half, as against 125 in the same period of March.

As has been repeatedly pointed out in Automotive Daily News, it is of less importance to make comparisons with last year's figures than to compare the month-to-month totals this year. So far the month-to-month totals this year have shown encouraging increases, while the comparisons with last year have been below. Some optimists are

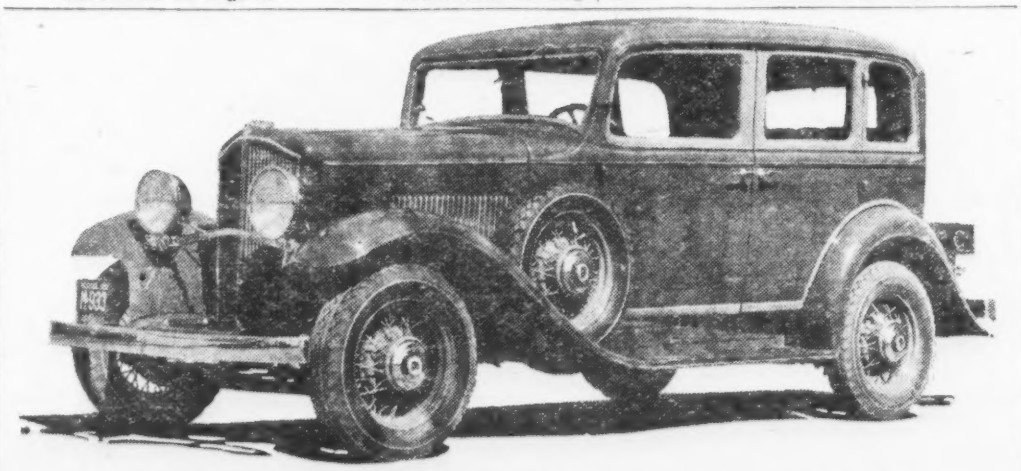
(Continued on Page 2)

STEEL OUTLOOK SEEN IMPROVED

New York, May 18.—The American Metal Market says that "increased steel production within the next fortnight is in prospect, chiefly by way of heavier Ford Motor Company requirements.

The Chicago district has been at about 20 per cent. for five weeks and is fully sustaining that rate now. The Pittsburgh district declined to a 20 per cent. rate eight

(Continued on Page 7)



NEW DE VAUX 80 sedan, with six wire wheels. Spares are carried in fender wells

N. S. P. A.-M. E. M. A. JOINT TRADE SHOW RULES ANNOUNCED

Detroit, May 18.—Regulations covering operation of and admission to the Joint Trade Show of the National Standard Parts Association and the Motor and Equipment Manufacturers Association, to be held in Detroit next December, are now definitely determined, according to announcement by the two sponsors.

The show will open in the Motor City's Convention Hall on Monday, December 5, and will close at noon on Saturday, December 10. The first three days will be closed to all but those connected with concerns that are members of either the N. S. P. A., the M. E. M. A. or the M. E. W. A.

It will be opened on Thursday, Friday and Saturday, December 8, 9 and 10, to invited guests, including non-member wholesalers who are customers of exhibiting manufacturers.

On Friday night and Saturday morning the show will be open to all automotive service men, who will receive their admission tickets from the jobber members of the two associations.

Concerns whose applications for membership are pending in either association at the time of the show will also be entitled to admission. Only those manufacturers who are members of either or both organizations are eligible to exhibit.

Official purveyors to the two associations and the automotive trade press may acquire show space as heretofore.

The application of the admission regulations will be handled entirely by a joint credentials committee, while all other matters pertaining to the show's operation will be directed by the Joint Trade Show operating committee.

Tax Expert Analyzes New Revenue Measure

(Continued from Page 1)

register a protest with their congressmen and senators against the imposition of such a tax, which is highly unfair and discriminatory.

"Every time a new car is bought under the new bill, the purchaser must add $23 to the bill on the average, and the collector of internal revenue will be waiting for his share every time a new truck or accessory is purchased. For every quart of lubricating oil, the motor user will dig up an additional 4 cents, and whenever it becomes necessary to replace a tire or a tube, there will be the tax collector to get his 50 or 60 cents," Mr. Walker said.

"Last year the average vehicle tax was just under forty dollars—$39.74 to be exact. This represented tag taxes, gasoline taxes, personal property taxes, and the income from a miscellaneous group of other special motor taxes.

"The total tax bill of the motor user in 1931 was about $1,025,000,000—almost the equivalent of anticipated revenue from the new Federal Tax bill. Even that total will be boosted another 14 per cent. by the addition of entirely new Federal taxes.

"The present bill as it came from the Senate Finance Committee provides for an excise tax on the sale by the manufacturer of 4 per cent. on automobiles, 3 per cent. on trucks and 2 per cent. on parts and accessories. Lubricating oil is scheduled to pay a tax of 4 cents a quart, while tires and tubes will be penalized at the rate of 5 cents a pound for inner tubes and 3 cents a pound for castings. In addition to that there is the 2½ cents per gallon import tax on gasoline."

The Treasury anticipates collecting the following during the fiscal year of 1933, according to Mr. Walker:

Automobile (4%)	$58,000,000
Trucks (3%)	6,000,000
Accessories (2%; except tires)	9,000,000
Lubricating oil (4c. gallon)	35,000,000
Tires (3c. a pound) and tubes (5c. a pound)	40,000,000
	$148,000,000

"That all of these taxes will be passed on goes without question," Mr. Walker continued. "The motor manufacturers quite frankly told the Senate Finance Committee that they always had passed on such taxes previously and must continue to do so.

"In the early days of the World War the Federal government first imposed special levies on purchasers of automotive merchandise," he concluded. "Under these taxes the car-owning public was called upon to pay $1,120,000,000 in special assessments before the measure was repeaed June 30, 1928."

NORWALK TIRE PLANS BATTERY PRODUCTION

Norwalk, Conn., May 18.—The Norwalk Tire & Rubber Company, whose plant in Winnipauk is now devoted entirely to the manufacture of one grade of automobile tires and tubes, will diversify its production this summer by the inauguration of a department for storage batteries, according to John W. Whitehead, president.

Production of the batteries is scheduled to start about July 1. Mr. Whitehead and H. C. Miller, secretary, announce. Operations at first will be on a small scale.

Space in the company's plant has been set aside for the new department, and Albert Mayer, of the Grand & Mayer Company, Detroit, has come to Norwalk to supervise the installation of equipment. The Grand & Mayer Company has been building batteries for the past 15 years, and a similar type will be made in Norwalk.

NEW DEPARTURE CO. SHUTS DOWN PLANT

Bristol, Conn., May 18.—The plant of the New Departure Manufacturing Company, with the exception of the office and a few scattered departments, closed May 16 for at least a week. Charles B. Greene, employment manager, estimated that about 2,200 persons are affected. Shifts have averaged about thirty-two hours a week.

Officials declared that all men affected by the shutdown would be on call to return to work as soon as orders are received. They expressed hope that the shutdown would not last longer than a week.

LOUISVILLE SALES DURING MAY SHOW GAINS OVER APRIL

(Continued from Page 1)

going so far as to suggest that business now is fine, and at least 20 per cent. ahead of last year. Be that as it may, dealers here are at least encouraged, and look for even better things in the second half of May.

CHARLOTTE, N. C., FORD BRANCH RESUMES

Charlotte, N. C., May 18.—The Charlotte branch of the Ford Motor Company resumed operations Monday with a force of approximately 900 men, it was announced by officials of the concern.

Resumption of the Ford activities in the city after the plant has been shut down since the middle of December is considered a big step toward better business conditions. It is expected that the plant will begin by putting out from 100 to 150 cars each day. The plant will be operated six days a week to keep production up to the amount necessary to fill the needs of dealers who already have on hand several thousand orders for the new Ford.

HORNING OF WAUKESHA SAILS FOR EUROPE

Waukesha, Wis., May 18.—H. L. Horning, president of the Waukesha Motor Company, has left for Europe to make arrangements for manufacture of the company's products abroad. The company will build no plants of its own in foreign countries. Mr. Horning plans to arrange with manufacturers in England and France to turn out Waukesha Motor Company lines.

Mr. Horning said he deplored the tariff policies which tend to hinder international trade.

UTICA AUTOMOBILE MAN APPOINTED CITY OFFICIAL

Utica, N. Y., May 18.—Francis P. Miller, president of the Utica Motor Car Company, Cadillac-La Salle distributor in central New York territory, has been named commissioner of public safety by Charles S. Donnelley, mayor. He takes the position formerly held by Curtis F. Alliaume, resigned.

SPARKS from DETROIT

De Vaux Moves Smoothly

* * *

Grand Opening May 28

* * *

Brass Hats Dig Hard

* * *

Convertibles Gain

* * *

Kettering Becomes Author

* * *

Chris Sinsabaugh—Detroit Editor

SEEMS to me I hit the nail on the head when the column said that De Vaux was going places under its new leadership, Continental Motors. Recent happenings go to prove this assertion.

With the factory at Grand Rapids running smoothly on the new stuff, Sales Manager Bob Mulch now is giving his attention to expanding his dealership, and he is doing a right good job. He has landed one plum in the Ohio-Franklin Company of Cleveland, which has taken the Continental-De Vaux distributorship for Cuyahoga and five other counties. Ohio-Franklin becomes part of the De Vaux family next Sunday, and the occasion will be fittingly celebrated that day with an official opening.

* * *

CASEY JONES, De Vaux factory man on the Pacific Coast, scored a bull's-eye too, by signing Franklin Motors, Inc., as southern California distributor. The concern is headed by Ralph Hamlin, who ranks with Charlie Howard of Buick and Earl Anthony, Packard distributor, as one of the leaders in and around Los Angeles. We recall Hamlin not only as a retailer of twenty-seven years' standing, but as the chap who twice won the famous Cactus Derby, at the time the most strenuous road race in the country.

* * *

THIS MAN JONES is moving fast. Not only has he got Hamlin's name on the dotted line, but he has signed dealers in Burbank, Long Beach and San Pedro, and he wires Mulch he will line up ten more De Vaux dealers in southern California this week. Plans are now to launch a simultaneous opening at all the new De Vaux southern California dealers the week end of May 28.

* * *

BOB MULCH will not mention any names at the present time, but he hints that he is closing a deal with a most prominent distributor to become a special representative and to assist him in developing De Vaux distribution.

* * *

IT'S ALMOST IMPOSSIBLE to find factory executives at their desks these days. The brass hats are digging for business, and, believe me, they are leaving no stone unturned. Take the Chrysler Corporation, for instance. As this is written Chrysler has five of the home office out talking to dealers, Plymouth three, De Soto four and Dodge four. This is in addition to the field men representing the various units. Roughly there are about 200 of these, so you get an idea of how every one is working.

* * *

ANOTHER EXAMPLE of this strenuous work is John Chick, Cadillac sales manager, who is about half way through an 8,000-mile trip via motor car, calling on his distributors and dealers and getting first hand reports on business conditions.

* * *

NASH'S ANNOUNCEMENT of eight convertible models calls attention to the vogue that type is enjoying this spring. It's been like a snowball rolling down hill ever since the shows. Makers who did not include a convertible in the lines displayed at the national exhibition are coming to bat now. Two or three were announced at about the time Nash was breaking its announcement, and now I hear of a couple of others that will be heard from soon.

* * *

CHARLES F. KETTERING, the wizard in charge of General Motors research, has turned author. The column understands "The New Necessity" will come off the press of the Williams & Wilkins Company of Baltimore in about a month. It will deal with the economical aspects of the automobile industry and touch on the factors that have set it up as America's leading industry.

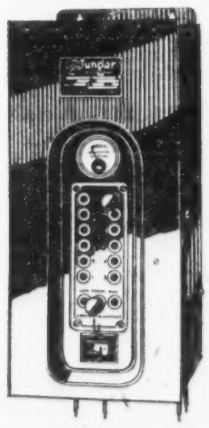
* * *

BENEFITS DERIVED through one sales company handling the marketing problems of Buick, Oldsmobile and Pontiac are noted in the case of Oldsmobile. Where the Lansing car used to have only two regional managers, it now has five; there are five assistant regional managers where formerly there was none; thirty zone managers now as against eighteen; the same ratio with assistant zone managers; thirty zone sales promotional managers as against none; five regional sales manager as against none, and 200 representatives as against fifty before.

DOES BATTERY CHARGING PAY?

JUST ASK ANY TUNGAR OWNER

He will tell you that it pays him because his Tungar is economical, fast and accurate. He will tell you of his own profit from Tungar, but he may not tell you that battery charging is, conservatively a $10,000,000 market and that Tungar owners get the lion's share. Yes — battery charging pays — when you use a Tungar charger.



Tungar for 16 years the leading battery charger, offers seven models for all types of shops. Write today to Section A-1025, Merchandise Department, General Electric Co., Bridgeport, Conn., for full information on the Tungar that best suits your needs.

GENERAL ELECTRIC

AUTOMOTIVE PRODUCTS

MERCHANDISE DEPARTMENT, GENERAL ELECTRIC COMPANY, BRIDGEPORT, CONNECTICUT

CO-ORDINATES DIRECT-MAIL AND NEWSPAPER ADVERTISING

By CHARLES B. BARR

Application of merchandising methods proven successful in other industries has enabled Budd Motors, Inc., Ford dealership, which moved from West Hartford to Meriden, Conn., last November, to show a large volume of business in new and used cars and service, despite adverse economic conditions.

During the eleven months the concern was located at 252 Park Road, West Hartford, from December 1, 1930, to November 1, 1931, 175 new and 300 used cars were sold according to Budd Lamontagne, manager.

Since last November 1, when the Meriden Ford dealership, formerly operated successively as Dutee W. Flint of Meriden, Inc.; Meriden Motors, Inc., and Silver City Motors, Inc., was taken over by the Lamontagne interests, twenty-two new Fords have been sold, and the used car inventory kept at an extremely low point.

Mr. Lamontagne reported that on May 1 the total used car inventory was less than $1,000, and of this amount $500 worth of cars had been taken in during April. A physical inventory is taken every month and depreciation written off, so that the actual selling value only is listed.

Mr. Lamontagne attributes the success of his business largely to intelligent use of newspaper and direct mail advertising properly coordinated. An effort has been made to inject a new note into the advertising material, with the purpose of attracting attention by variety of appeal and getting away from the stereotyped.

During the first year the dealership sent out more than 50,000 pieces of mail. Many of the letters and postcards were decidedly unusual in design, and attracted wide interest.

Postcards on which the promotion material was done in handwriting reproduced by photoengraving process proved especially effective. Printed in green ink, these cards appeared to be written by hand. They were sent to all Ford owners in the territory. Copy 1 of these cards read as follows:

"Have you one of the 'Better Fords'? The difference is in the care they get. You can ride more comfortably if you let us check your 'shocks,' more safely if we look at your brakes, faster if we check your car for you. Call 4-7100 and we will call for and deliver your car. (No charge.)

"BILL ANDREWS,
Service Manager."

Another card of the same type bore the following:

"It's up to you! If we take care of your Ford you not only get better performance, longer life, but a better trade when you buy a new car. Here at Budd's we have complete shop and tools, expert Ford-trained men and low rates. We call for and deliver your car."

As a result of this type of promotion, coupled with the customary group service offers, Budd Motors was able to make a strong showing in its service department during ordinarily poor months. Last August, for instance, the department sold $1,200 worth of parts and $1,800 of labor on one $6.85 labor special alone, parts being extra.

Introducing its "Christmas Club" plan on the sale of used cars, Budd Motors used an advertisement in Meriden papers written in the form of a news story. Results from this promotion were very gratifying, according to Mr. Lamontagne. The copy ran as follows:

"Automobile dealers are using the club idea of weekly payments to make it possible for people to own automobiles and pay as they ride. Budd Motors, Inc., local Ford dealers, have found this method very satisfactory.

"Automobiles at one time were considered a luxury, but today they really are a necessity.

"One family in town wanted to go to a family reunion for Thanksgiving. Carfare for the entire family would have been $62.75. They bought an inexpensive used car, reconditioned and ready to go, and they will still have a good car when they return.

"Visit Budd Motors' used car salesroom at 40 Butler St. and see the surprising values and learn how easily you may own a good used car."

A "99-cent sale," staged by the dealership in December, resulted in an excellent turnover of used cars, Mr. Lamontagne reported. A model T Ford sedan, worth perhaps $10, was offered and sold at 99 cents, and other cars were put up at prices ranging from $9.99 to $119.99.

It was announced that no cars would be sold before 11 a. m.; that the principle of "first come, first served," would be observed. The advertising specified that all cars offered were in good running condition, with no junks whatever. Cars under $40 were sold for cash only, while those over $50 required one-half down and the balance weekly.

Another stunt which has helped to move used cars for Budd is a post card on which blank spaces are provided as a means of advising car owners that the dealership has in stock a used car in which they might be interested.

Names for this post card list are taken from the records of car owners of all makes. For instance, if it is noted that William Blank bought a Wampus Six in 1928, and is still driving it, it is inferred that he is probably not in the market for a new car at this time, but may be a prospect for a used model.

The used car inventory discloses a 1930 Mampus in stock, and a post card, properly filled in, is sent to Mr. Blank. The following information is on the card:

"Dear Mr. Blank—We have a used 1930 Wampus that we think might interest you. This car has been thoroughly reconditioned, looks well, runs good and will give you many miles of satisfactory transportation. Your present car taken as part payment. Ask for Mr. Whoof at the used car department."

The idea dominating this stunt, of course, is that Mr. Blank probably cannot afford a new car, but he may be interested in buying a used car of the same make as his own, but of more recent model. The cards have been very successful in moving used cars, particularly those of the better grade, according to Mr. Lamontagne.

One of the direct mail messages which attracted considerable comment contained no capital letters. Even the name of the addressee was filled in with all "lower case" type. Under the uncapitalized letterhead appeared the catchline: "budd can use your present ford now."

The body of the letter was as follows:

"want a nice new ford—new motor, new tires, new paint, in at-

(Continued on Page 11)

ALABAMA COURT RULES ON TRUCK LICENSE RATES

Montgomery, Ala., May 18 (UTPS).—Another chapter has been written in Alabama's truck tag war with the decision of the Alabama Court of Appeals that overloaded trucks are not liable for licenses higher than the capacity given by manufacturers.

The case was appealed from Dale County Circuit Court, which had fined Forrest Water $150 for operating a truck without proper license. Water was operating a ton and a half Chevrolet truck with trailer and was carrying four and one-half tons of lumber at the time he was arrested. It was pointed out in court that he had purchased a tag for the truck costing $23 and another license for the trailer costing $11.75. The judge in the appeal court here stated that truck owners should buy license according to the stamped capacity of the manufacturer and not the actual loaded capacity of trucks.

CLOTHING MANUFACTURER'S TEST SHOWS MOHAIR VELVET UPHOLSTERY EASIER ON THE CLOTHING

Kuppenheimer urges cars be equipped with material that subjects clothing to least possible wear

Collins & Aikman Corporation has mentioned before the fact that mohair velvet upholstery is easy on the clothing. But it now appears that the effect of upholstery upon clothing is more important than the automotive industry has supposed.

The letter from B. Kuppenheimer & Company reproduced here is self-explanatory. In self-protection, the clothing manufacturers have traced down a representative number of complaints about improper wear from suits and overcoats, and found that they usually come from people who drive cars upholstered with harsh, abrasive fabrics.

The tests made by Kuppenheimer were made on their own initiative. They represent a sincere effort to determine the type of motor car upholstery which will give most satisfaction from the standpoint of clothing-wear.

Collins & Aikman manufacture both flat fabrics and pile fabrics, but have always recommended pile fabrics for automobiles. The results of these independent tests should be interesting to automotive manufacturers who are considering every possible angle today in their efforts to make their cars represent extra value.

EXECUTIVE OFFICES
B. KUPPENHEIMER & CO., INC.
415 SOUTH FRANKLIN STREET
CHICAGO

Collins & Aikman Corporation,
25 Madison Avenue,
New York, N. Y.

Gentlemen:

In answer to your inquiry, we are glad to review the circumstances that prompted our recent wear tests.

The number of complaints on improper wear of suits or overcoats received by us in the past two years has charted a course of consistent increase. We have demonstrated to ourselves, and to other factors in the clothing industry, that many of these complaints are directly traceable to the wear and tear encountered in the use of an automobile.

As a result, we have conducted an exhaustive test on the effects of various types of automobile upholstery on men's clothing. The upholstery fabrics tested were whipcord, Bedford cord, broadcloth, mohair mixtures and all-mohair velvet. The test entailed 100,000 movements on an abrasion machine — the equivalent of more than one year of intensive wear on a suit or overcoat which is worn every day. The suit and overcoat fabrics tested were medium or average grades, typical of the fabrics worn by the average automobile driver.

Results: All-mohair velvet left evidence of virtually no wear upon the suit or overcoat fabric. The mohair mixtures showed the second least degree of wear. The broadcloth was decidedly harsh, leaving the suit and overcoat fabrics in an unsightly condition — while the whipcord and Bedford cord virtually ruined both the suit and overcoat fabrics tested.

It is our conviction that constructive steps could easily be taken by the automotive industry and the various component factors, to equip all motor cars with the type of upholstery which subjects the rider's clothing to the least possible degree of wear. We are acquainting the National Association of Retail Clothiers and all leading producers with the facts contained in this letter.

Very sincerely,

Ludwig Stein
President
B. KUPPENHEIMER & CO., INC.

COLLINS & AIKMAN CORPORATION

25 MADISON AVE., NEW YORK CITY

Makers of Ca-Vel—Velvets of Enduring Beauty

Automotive Daily News

"Of, By and For the Entire Automotive Industry"

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Price Control

IN a recent address before a group convention of machinery trades executives, Nelson B. Gaskill, president of the Lead Pencil Institute, delivered an address on the present problem of price control which is worthy of the most earnest study that American business men can give it.

Mr. Gaskill prefaced his remarks by the statement that "the recovery of normal volume of business at present price levels throughout industry as a whole would not restore prosperity. On the contrary, it would simply increase the loss factor in the general credit equation." And when he says that if this statement is even approximately true, the situation deserves our most serious consideration, we can heartily agree.

Denying any desire to suggest illegal price-fixing agreements, Mr. Gaskill continues:

"If we regard a price agreement as one method of assuring the general profit margin we find that this avenue of relief in the present emergency is closed by the anti-trust laws.

"There is an alternative relief, however, contained in the economic formula of supply and demand. By this process the surplus production which causes low prices is wiped out. A seller's market and higher prices return and the sun of prosperity shines upon the survivors.

"But, instead of allowing this to happen, instead of encouraging this process of economic recovery, we are using every possible means to prevent it. The government, through the anti-trust laws, is insisting that the economic formula of unlimited price variation, with all its destructive consequences, shall work. At the same time the government, through the Reconstruction Finance Corporation, is exerting all its power to avert the consequences of unlimited price competition to prevent the economic formula of recovery from working as it is designed to operate.

"And if my premise is reasonably true, in due course it will appear that what we shall have assumed as emergency measures will be permanent institutions. The conditions we have sought to alleviate as temporary will to our sorrow prove to have escaped solution."

We would like to quote Mr. Gaskill in full, but unfortunately space in this department forbids, and we must content ourselves with giving his summing up and his plan for curing our present ills:

It seems to me that the only method by which there can be provided a check upon profit-destroying prices and at the same time avoid the necessity for a governmental price control is to utilize the force of individual competition, but to subject that competition to control. And that control lies in requiring the individual, whether producer or distributor, to observe his cost as his minimum selling price.

By this process, competitive prices, always reflecting the return of cost, except for some necessary exceptions possibly, will control the market level and the intervention of a governmental control becomes unnecessary. This control on price will also control production. For overproduction will fall as a loss upon its producer rather than upon a whole industry and ultimately upon the whole social order. The individual producer will be obliged to control his production or be liquidated.

Such a system would substitute for the present unlimited freedom of competition a new character of competition, regulated to conserve the public interest in profit. The reward would be to the efficient rather than depend upon the financial strength to impose or sustain losses. It would tend directly to the elimination of waste because the reduction of cost would contain the key to competitive price-making. The competitive strain would be taken off the balance sheet and thrown on the cost sheet.

Naturally, under such a system, the last iota of needed supply would be furnished at prices which, as a minimum, return cost. The business would go to the low cost producer or distributor up to his capacity. Beyond that point the next higher cost producer would enter the market.

And finally, only when industry is stabilized by permitting it to serve the whole of the existing demand at prices which constantly and continuously return cost at least, is there any possibility of stabilizing employment and guaranteeing reasonable wages.

In its extreme form, the proposal which I am submitting, suddenly and coercively applied, would be economic revolution. A process of economic evolution seems preferable.

These powers, which may be specifically stated, should include the power to establish a uniform system of cost accounting and by action of a majority in any trade or industry, to establish the rule of individual cost as the minimum of individual selling price. And this rule, as well as the other rules which an industry might be empowered to adopt, should be enforced by the Federal Trade Commission.

Trade Association News

Pennsylvania Association Seeks Headlight Opinions; Urges Excise Tax Protest

The Pennsylvania Automotive Association from its Harrisburg headquarters is asking its members their opinions in regard to headlighting laws in that state. The following request has been sent to all members:

For a number of years the Pennsylvania Bureau of Motor Vehicles, operating under authority conferred upon them by the Motor Code, has been requiring Pennsylvania motor vehicle owners to carry electric head lamp devices, rear and combination rear and signal lamps, etc., of an approved type.

During recent inspection campaigns, proprietors of official inspection stations were criticized for following headlight instructions issued to them, and we would appreciate a frank expression from you on the following:

1. Shall we request a repeal of those provisions of the Motor Code, pertaining to light equipment on motor vehicles?

2. Do manufacturers of motor vehicles really desire a law restricting lighting equipment?

3. Would any kind of electric lights, fulfilling certain requirements as to glare and distance be acceptable?

4. Will any legal restrictions on lighting equipment solve the problem confronting us unless we have strict state and local enforcement?

Your replies will be presented to W. H. Brearley, chairman of our legislative committee, for consideration at the next meeting of his committee.

Official inspection station proprietors were recently requested to advise officials of the Pennsylvania Department of Revenue, on their report form, sticker requirements for the inspection campaign, which begins July 1, 1932.

The Pennsylvania Automotive Association has sent out the following bulletin, which is of interest to dealers everywhere and in every state:

We are just in receipt of advice that the Senate Finance Committee at Washington has restored the tax of 4 cents per gallon on all lubricating oils sold and manufactured in the United States, regardless of grades or uses.

This tax is in addition to a tax of 4 per cent. on the sales price of passenger cars, 3 per cent. on the sales price of trucks and 2 per cent. on parts and accessories, and we feel that these taxes are simply more than the industry can possibly stand at this time. We therefore suggest that you send protests immediately, either by telegram or mail, to Hon. David A. Reed, and also to Hon. James J. Davis, addressing each of these men at the Senate Office Building, Washington, D. C., wording the protest in your own language.

The automobile industry has protested against these taxes from the very beginning, but has taken the position that it is willing to pay its share of any general tax necessary to balance the budget. Motorists in the United States paid out approximately $640,000,000 in taxes last year.

We therefore urge you to send your protest immediately upon receipt of this bulletin.

National and state farm organizations have joined with the automotive industry in protesting against unfair automotive taxes. It is suggested that you get in touch with local farm and grange leaders and enlist their active co-operation in protesting by wire or letter against discriminatory automotive sales taxes.

Minnesota Association Plans Active Summer Season

The Minnesota Motor Trades Association in Minneapolis is expecting shortly a decision in the 1931 personal property tax case which is now before the court. The case was argued on May 5 and is now under advisement. The following bulletin has gone out to members, covering this important case and also other association activities:

You have been advised in previous bulletins that the abatement of the 1931 perosnal property tax on new automobiles has been withheld, due to the granting of a temporary restraining order. This case was argued in District Court May 5. We should have a decision by the middle of the month. Regardless of what the decision is, the case may be appealed to the Supreme Court. Should such an appeal be taken, the matter will not be definitely decided until late this year.

In the meantime, those who have not paid this tax have been served with a notice from the sheriff's office. The serving of this notice is a regular procedure, as prescribed by law. If you have received such a notice and have not already notified the association office, please do so immediately. We will then communicate either directly or through you with the county officials in your county, whom we feel confident will hold this matter in abeyance until a definite court decision has been rendered.

The next school for auto lamp adjusters will be held at Dunwoody Institute in Minneapolis on May 23 and 24. You are not permitted to operate an official auto lamp adjusting station unless you have in your employ a graduate of this school.

We urge all of our members who have not set up an official station as yet to send an employee to this school so that such a station can be established. The state highway patrol will, no doubt, carry on quite an intensive drive against faulty headlights during the coming driving season, and you should be equipped to handle the necessary adjustments.

The association now has under consideration the sponsoring of a state-wide safety drive which will include headlights. If such a campaign is inauguarated, those garages having official lamp testing stations will probably secure the greatest benefit.

C. R. LOREE APPOINTED BY LOUISIANA A. T. A.

New Orleans, La., May 18.—Announcement of C. R. Loree, secretary and treasurer of the Automobile Trades' Association of Louisiana as sales manager of the George W. Stem Motor Company, Chrysler and Plymouth distributor, was announced here today.

TO OPERATE 20 BUSES

Trenton, May 18.—The Public Utility Commission has ordered Motor Bus Lines, Inc., to discontinue within twenty days operation of its bus line between Paterson, Ridgewood and Westwood. Public Service Coordinated Transport received authority to operate ten buses each on its Newark-Hackensack and Newark-Rutherford lines within Lyndhurst.

TAKES GRAHAM LINE

New Orleans, La., May 18.—Shannon Motor Company, 750 St. Charles St., has been appointed distributor of the Graham line of cars. W. L. Shannon, head of the company, has long been identified in the automobile field of the South. He is also head of the Shannon Motor Company at Nashville, Tenn., Graham distributor for that section.

LOUISVILLE DEALERS ELECT WELLS FOR 28TH TERM

Louisville, Ky., May 18.—Prince Wells, of the Prince Wells Company, Nash distributor, Louisville, has been re-elected for his twenty-eighth consecutive term as president of the Louisville Automobile Dealers Association. Clifford Bowman of the Hite D. Bowman Company, Pierce Arrow distributor, was named first vice-president; Turner Summers of the Summers-Herrmann, Inc., Ford, second vice-president, and J. Garland Lea was renamed secretary-treasurer, a post he has held for about ten years, or since coming to the organization from the Louisville Courier-Journal, where he was automobile editor, to succeed George Holmes, later manager for Buick and Graham in Louisville, prior to going with Ford Motors Company.

Directors include the officers, along with J. Rumsey Weir of the Weir Motors Company (Chrysler), John R. Boyd of the United Motors Company (Dodge), C. L. Alderson, Standard Auto Company (Cadillac, La Salle and Oldsmobile); William Spalding of the Reo Spalding Company, F. D. Morrison, Packard Louisville Motor Company; W. C. Smith, Broadway Motor Sales (Chevrolet).

Every one of the officers and directors of this organization have been continually in the automobile business and members of the organization for periods of at least ten years, the majority having been active much longer than that.

COMING EVENTS

MAY

16-20—**San Francisco, Cal.** United States Chamber of Commerce, annual meeting.
19-20—**Chicago, Ill.** National Battery Manufacturers Association meeting. Hotel Sherman.
23-28—**Chicago, Ill.** Radio Manufacturers Association, meeting, Hotel Sherman.

JUNE

Paris, France.—International Automobile Manufacturers Association sixth annual Motor Transport Congress.
1- 3—**Tulsa, Okla.** American Petroleum Institute, mid-year meeting, Mayo Hotel.
8-11—**State College, Pa.** American Society of Mechanical Engineers, National Oil and Gas Meeting.
12-17—**White Sulphur Springs, W. Va.** Society of Automotive Engineers, summer meeting.
20-24—**Chicago, Ill.** Motor and Equipment Wholesalers Association, Edgewater Beach Hotel, summer conference.
20-24—**Atlantic City, N. J.** American Society for Testing Materials, annual meeting, Chalfonte-Haddon Hall.

JULY

3—**France.** Grand Prix Automobile Race.
5- 9—**Southampton, England.** Commercial Car Show.
9-10—**Belgium.** Grand Prix Automobile Race.
17—**Germany.** Grand Prix Automobile Race.
20-22—**Llandrindod, Wales.** Commercial Car Show.

OCTOBER

3- 7—**Washington, D. C.** National Safety Council, meeting.
3- 7—**Buffalo, N. Y.** National Metal Exposition, 174th Regiment Armory, W. H. Eisenman, 7016 Euclid Ave., Cleveland, director.
3- 7—**Buffalo, N. Y.** National Metal Congress. Sponsored by American Society for Steel Treating, with co-operation of American Society of Mechanical Engineers, Institute of Metals and Iron and Steel Divisions of American Institute of Mining and Metallurgical Engineers, American Welding Society, Wire Association.
13-22—**London, England.** Olympia Show.

Classified Advertising

Classified Rates 5c Per Word

CAN YOU USE THIS MAN?

Twenty years of successful automobile experience, including fourteen years with one manufacturer which covered duties of accountant-cashier, credit manager, retail and wholesale manager. Past six years in branch house of one of the larger automobile companies and also as manager of one of their larger dealers. Due to business conditions, present directors have decided to liquidate, necessitating a change. Age thirty-seven, married and in splendid health. Best of references. Can locate where necessary.

Box 296, Automotive Daily News
427 Fisher Bldg., Detroit, Mich.

MANUFACTURERS ATTENTION

Representative position wanted with nationally known product or manufacturer in automotive field. New York State or other Eastern territory desired on commission contract basis. Box 297, Automotive Daily News, 350 Hudson Street, New York.

Retail Salesmen—This Is Your Page

This department is devoted to the interests of the retail sales division of the industry. Salesmen, this is your department. Automotive Daily News wants you to get something from this department that will help you in your work on the firing line. It wants you to pass on your own experiences, successes, failures to help your brother salesmen. Send in your story in the form of a letter, or even a postal card, and let us get it ready for publication. Your achievement or your mistake may help another salesman to make sales or avoid errors that cost you commissions.

Dealers read this page. Give us the benefit of your reactions on these problems that affect the work of your salesmen, the men on the firing line, the men who bring home the bacon or don't.

USED CAR SALESMAN CAN SELL EVEN PROSPECTS WHO 'KNOCK'

By K. H. LANSING

Turning away from a used car shown to him, the prospect calling at the used car lot of Wes Calhoun, Ford dealer, 6118 North 5th St., Olney, Philadelphia, remarked: "No use wasting time on that car; it's all shot."

"I wish you would tell me why you say that," said Walter R. James, the used car salesman thus addressed as he pleasantly regarded his prospect. "I mean it, for the car seems in good shape to me and I am always willing and eager to learn the viewpoint of the man who is considering a purchase. Won't you tell me what there is about it you don't like?"

The caller gave his version, which wasn't very convincing. James, without contradicting him, had an answer ready, covering in detail every objection made by the prospect and emphasized the good points of the automobile. That was the start of a little talk that ended by James selling that identical car to the man before he left the lot.

The foregoing method as exemplified is somewhat typical of the way in which James, the outstanding used car salesman of the firm, sells cars against any resistence that may arise. He follows out carefully the rule laid down by Calhoun, "Never antagonize the prospect in any way," but puts his own personal "twist" into play in its application.

James confines his selling efforts almost entirely to the open-air display of cars on the lot which adjoins the sales and service building. The exhibits here rarely number more than thirty units, and in ordinary times from twenty-two to twenty-five pieces are about the maximum. Odney, a suburb, is chiefly a residential section, and while virtually no new cars are sold during the daytime, used automobiles sell during the daylight hours on week days and on Sunday from 10 in the morning till 2 in the afternoon, as the department is in operation seven days a week.

There is no "floor turn" for used cars. Practically all the outside used car solicitation and prospect calls are made by H. A. Petri, who covers sales on the lot when James is absent. Any new car leads picked up by James or Petri are promptly turned over to the new car department, and vice-versa.

Aside from a close general knowledge of cars, and used cars in particular, plus the ability to apply psychology now and then, courtesy is the main feature in selling used automobiles for Wes Calhoun, and James, in showing prospects about, has a little book in which he makes a practice of jotting down, with the names and addresses of the prospects, the make and model of any used car for which the prospect asked, but which was not in stock at the time of his call. With this prospect in mind, an effort is made to secure such a car and, when this has been done, it is driven at once to the home, or place of business of the patron—usually the former. This plan has helped to effect many of the seventy sales of used automobiles made by James since January 1.

Used cars valued at $150 and upward are reconditioned thoroughly, a special point being made of their good appearance. Every two days a different, good-looking model is displayed upon a small platform on the front part of the lot close to the sales and service building, and James, in showin? prospects about, calls attention to this special exhibit.

"It is not unusual," says James, "for a caller at the lot to ask for some particular model he had noted a short time before, as he had driven by, which goes to prove that a good open air display is an aid in making sales. Another point is that persons seeking to buy, or at least to look over used automobiles feel less hampered and constricted when going about a lot than they do in a sales room and, if they don't see what they want, feel they can go away without being importuned to buy."

The firm advertises used car special bargains in a community newspaper, taking space two columns wide by three or four inches deep, and also uses the classified columns in the metropolitan dailies.

While the firm does not get much transit trade in Olney, the used car department sees to it that all transients are accorded the same courteous treatment as are regular customers and residents of long standing.

Born Lucky

(From The Paper Salesman)

1. The chances were even that you would be born a girl. You won.
2. The chances were against your living to be 21. You won.
3. The chances that you would be born a boy and live to 21 were one in four. You won.
4. The chances that you would be born somewhere else than in the United States were, roughly, fifteen to one. You won.
5. The chances that you would be born an American, a boy, and live to be 21, were, therefore, only one in sixty. You won.
6. Out of the twelve depressions this country has suffered in seventy-five years, you escaped all but one or two (consult your age).
7. The pain and suffering of this one you have escaped entirely, or 90 per cent., we'll say.
8. You learned more lessons in the last two years than you learned in twelve or sixteen years at school; and you learned them not too late.
9. Prices in securities, real estate, possessions generally, are down; even John D. Rockefeller is worth half what he was worth in August, 1929. Good levels will return, for him and for you.
10. So, having won practically every chance the world gives its children, just conquer the present indisposition by simple diet, sunlight, kindness to other people and as much mental composure as you can manage.

Out of every depression we ever had, came a boom

Unique Car Advertising Display

St. Louis, May 18.—One of the most unique automobile advertising displays seen in this city in recent years has been placed on Lindell Boulevard, one of the city's heaviest traveled downtown arteries, by the Oliver Cadillac Company, local Cadillac and LaSalle distributors.

The display consists of an actual stock model Cadillac, mounted on a small platform, in front of a large and attractive billboard. The billboard is a permanent display, but the automobile may be driven from the platform, thus allowing the Oliver Company to use any model of Cadillac or LaSalle they desire. The model is changed periodically, and small signs are on each end of the exhibit designating the type, make, and price of the automobile being shown. The display is equipped with brilliant lighting combinations for night usage.

George G. Bauer, advertising manager for the Oliver Company, states that due to the splendid location of the exhibit and newness of the idea, the display is attracting much attention.

"It is especially attractive at night when the lights are on," commented Bauer, "and many people stop their cars on Lindell Boulevard to actually approach the layout, for the purpose of inspecting it minutely."

2 NEW STEWART TRIUMPHS

Honest Trucks-Honestly Rated-Honestly Priced

MODELS
Bevel Axle

	Chassis Prices
1 ton, 4 Cylinder	$ 695
1 ton, 6 Cylinder	795
1½ ton, 6 Cylinder	795
1½ ton, 6 Cylinder	995
2 ton, 6 Cylinder	995
2 ton, 6 Cylinder	1195
2 ton, 6 Cylinder	1695
2½ ton, 6 Cylinder	1990
2½ ton, 8 Cylinder	2390
3 ton, 8 Cylinder	2990

Worm Axle

*3 ton, 6 Cylinder	$2690
*3½ ton, 6 Cylinder	3690
*3½ ton, 8 Cylinder	3990
*3½ ton, 6 Cylinder	3990
*5 ton, 6 Cylinder	5190
*7 ton, 6 Cylinder	6190

Double Reduction or Worm Rear Axle Optional

All Prices f.o.b. Buffalo, N. Y.

Stewart scores again with two new sensational sixes—a 1½ tonner and a 2 tonner both built for long years of constant, faithful service. Never in Stewart's history have we been able to offer so much truck for the price.

Like all Stewarts, they have all the latest known worthwhile mechanical improvements plus Stewart time-tested features. Stewart world-wide reputation for long life, low repair bills and less cost to run is now available at these low prices.

Stewart MOTOR TRUCKS

Catalog and further details gladly sent upon request

STEWART MOTOR CORPORATION
BUFFALO, N. Y.

Stewart Trucks Have Won—By Costing Less To Run

Relative Wear of Metals Due to Abrasion

By CHARLES R. WEISS
Chief Engineer, Link Belt Company

(A paper delivered at the Three-M Congress of the American Society of Mechanical Engineers.)

The users of product are familiar with the results of wear, and know that wear reduces sections, resulting in a reduction in strength value. Coincidentally, wear renders equipment made for precision work valueless, as its effectiveness for preciseness is lost as wear of the parts progresses.

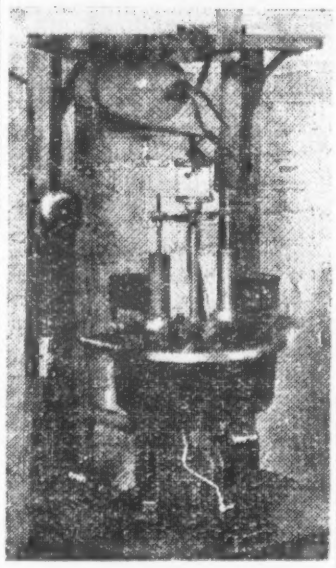
Louis Jordan in an article discussed wear due to abrasion, wear due to erosion, and the combination of the two.

The Link-Belt Company's interest in "Wear of Metals" was induced primarily in the hope of ascertaining, particularly for power transmission chain purposes, the type of material best suited and the type of treatment which should be applied in order to obtain maximum wear value at a minimum of cost expenditure. In 1923 H. E. Hayward, one of the Link-Belt Company's research engineers, commenced his investigation work, and it was decided at that time that we would confine our research to the effects of abrasive wear.

Investigation of data in existence at that time disclosed the fact that but little information was available covering this subject.

Consideration was given to the manner in which surfaces would abrade. Where two co-operating metal surfaces are separated by a film of lubricant sufficiently adequate to withstand the bearing pressure, no wear occurs. In the presence of foreign material sufficiently spread and of a dimension less than the thickness of the oil film, the foreign material will not abrade. In the presence of abrasive material thicker than the oil film, then the metal surfaces will abrade.

Data available at that time under the subject of abrasives, disclosed that the abrasives were non-uniform, due to their characteristics. It was recognized that we must have a uniform abrasive attack, and that we must have a uniform material to serve as a comparator.



Finding a uniform lap was difficult, as most purchasable grinding elements were not uniform in the rate of their attack, due to a glazing over of the surface. Experiment proved that a rotating, machined cast-iron doughnut-shaped disk, supplied with a fixed amount of a uniform abrasive in the presence of fixed amounts of water, furnished a uniform lap. Water was selected on account of the thinness of its film and its ability to keep the temperature uniform. The doughnut-shaped disk was rotated at a speed which would not build up centrifugal action to a point at which the abrasive would leave the lapping disk.

Selection was made of a uniformly sized abrasive, which would keep turning over on itself and which would not merely scratch the surfaces being abraded. This action gave to the parts being tested a frosted appearance, indicating that the abrading action was not that of a uniform scratch, but that it was more of a turbulent action.

The abrasive selected was eighty-mesh Crystolon.

It was decided that the loss in weight under a fixed pressure per unit of area, should be the measure of the resistance of the material to the abrasive attack.

The comparator material was next ascertained, and this was discovered to be Key steel, .08 to .12 carbon, and all determinations which appear as a part of this paper have been compared with the Key steel.

A description of the device, which was especially developed for the abrasion tests, is best presented by two photographs shown, the full-length photograph illustrating the general scheme, and the close-up the details of the lapping medium.

The machined doughnut-shaped gray iron disk "A" is rotated through the worm-gear mechanism shown. "B" indicates the circular one-pound weights which operate directly on top of the materials being tested. These weights are free to float in order to provide uniformity of load distribution.

The feeders for the abrasive are shown at "C," and these were cam actuated for a uniform rate of abrasive flow.

The flow of the water was controlled from the lubricator "D," and the water was fed into the center of the disk so that the slight centrifugal action uniformly cleansed the lapping disk of the accumulations of the materials being abraded.

The types of specimens being tested are shown by the parts lettered "E." These were accurately dimensioned one-inch squares in order to present one square inch of projected bearing area. These are prevented from rotating with the disk by means of V-shaped knife edges supported close to the lapping disk. The specimens are so held that a radius of the lapping disk is parallel with a diagonal of the square test specimen.

Approximately 1,400 determinations of practically all existing materials and treatments have been made, and the information listed herein is descriptive of the type of material, its hardness value, and its

(Continued on Page 10)

CUMULATIVE NEW PASSENGER CAR

In this table 25 states and the District of Columbia

Returns for today: Arkansas, Indiana, Montana, North Carolina, Oregon

States	AUBURN GROUP			CHRYSLER GROUP					FORD GROUP			GENERAL MOTORS GROUP						
	Auburn	Cord	Totals	Chrysler	De Soto	Dodge	Plymouth	Totals	Ford	Lincoln	Totals	Buick	Cadillac	Chevrolet	La Salle	Oldsmobile	Pontiac	Totals
Arkansas				9	4	27	39	79	47		47	11		220	2	1	16	250
Delaware				12	4	1	39	56	11	3	14	26	3	157		11	29	226
Florida	8		8	26	7	20	95	148	61	1	62	48	5	360	5	4	44	466
Idaho	4		4	9	3	6	22	40	34	1	35	11	1	93		8	8	121
Illinois	95	7	102	309	302	279	935	1825	522	26	548	400	71	2648	43	280	472	3914
Indiana	64	4	68	112	189	158	376	835	231	10	241	161	15	1213	11	169	210	1779
Maryland	22		22	52	41	43	183	319	46	3	49	78	7	955	5	24	104	1173
Michigan	30	1	31	151	224	151	602	1128	376	24	400	296	61	1697	26	227	321	2628
Minnesota	11		11	93	42	67	366	568	226	12	238	134	10	1427	8	109	191	1879
Missouri	46	3	49	68	180	109	496	853	318	9	327	174	13	1757	11	92	212	2259
Montana	7	1	8	22	17	16	59	114	90	1	91	31	1	269	1	13	50	365
New Hampshire	2		2	18	23	21	113	175	58	1	59	46	5	278	1	17	68	415
North Carolina	18		18	55	27	54	153	289	77	1	78	65	4	728	1	23	78	899
North Dakota	1		1	6	6	12	30	54	73		73	20	1	273		18	18	330
Oregon	6		6	27	17	27	95	166	58	5	63	36		315	1	13	27	392
Pennsylvania	132	1	133	458	390	368	1290	2506	347	29	376	660	55	3356	39	233	572	4915
Rhode Island	10		10	45	53	19	191	308	33	2	35	73	9	339	9	12	92	534
South Carolina	4		4	22	24	17	48	111	48		48	31	1	388		7	20	447
South Dakota	1		1	12	11	15	42	80	64		64	15	1	148	1	20	20	205
Utah	7		7	3	9	5	18	35	17		17	15	1	131	1	8	11	167
Vermont	8		8	16	9	16	55	96	18		18	48	1	183	2	18	48	300
Virginia	14	1	15	48	40	47	122	257	152		152	68	10	907	2	20	99	1106
Washington	10		10	49	45	35	199	328	124	6	130	71	5	376	5	48	54	559
West Virginia	11	1	12	48	31	42	170	291	71	1	72	43	3	472	2	22	72	614
Wisconsin	34	1	35	61	76	66	278	481	186	3	189	170	23	1126	4	107	178	1608
Dist. of Columbia	23	1	24	28	60	39	135	262	29	7	36	78	15	609	1	55	97	855
Line Total	568	21		1759	1834	1660	6151		3317	145		2809	321	20425	181	1559	3111	
Group Total			589					11404			3462							28406
Arkansas, 1931				24	5	57	21	107	340		340	16	7	394	2	9	25	453
Delaware, 1931	4		4	23		6	6	35	236	1	237	39	5	207	7	22	44	324
Florida, 1931	29	4	33	83	11	40	39	173	939	5	944	88	6	908	3	25	111	1141
Idaho, 1931	7		7	14	16	24	17	71	210		210	16		245		9	24	294
Illinois, 1931	408	33	441	440	242	608	258	1548	5179	58	5237	719	139	4611	98	720	929	7216
Indiana, 1931	195	17	212	254	241	322	212	1029	2552	14	2566	369	36	2880	21	387	486	4179
Maryland, 1931	41	5	46	87	35	62	83	267	1133	3	1136	138	15	1342	10	69	239	1813
Michigan, 1931	200	7	207	353	171	473	135	1132	4713	28	4741	666	104	4210	42	613	782	6417
Minnesota, 1931	72	5	77	224	46	155	235	660	2129	7	2136	222	21	2956	17	237	391	3844
Missouri, 1931	75	5	80	134	55	201	149	539	1941	11	1952	227	21	2656	14	162	328	3408
Montana, 1931	7	1	8	37	19	22	27	105	366		366	37		358	1	19	53	468
N. Hampshire, '31	18		18	51	15	35	37	138	576	3	579	104	11	467	4	64	116	766
No. Carolina, '31	17		17	92	22	84	53	251	1415	1	1416	73	9	1129	3	47	98	1359
North Dakota, '31	6		6	23	7	32	25	87	464	1	465	42	2	571		26	58	699
Oregon, 1931	17		17	53	31	42	32	158	603	1	604	66	6	627	4	42	71	816
Pennsylvania, '31	404	10	414	764	320	689	449	2222	5141	38	5179	1075	126	5745	94	667	1030	8737
Rhode Island, '31	41	1	42	91	61	94	29	275	505	7	512	115	15	462	18	30	158	798
So. Carolina, 1931	1	2	3	38	38	43	21	140	642		642	46	3	735	2	18	56	860
South Dakota, '31	7		7	28	14	53	48	143	344		344	35		440		51	33	559
Utah, 1931	8	1	9	19	7	35	5	66	283		283	42	5	294	1	7	37	385
Vermont, 1931	16		16	44	12	49	51	156	319	1	320	83	7	286	4	37	64	481
Virginia, 1931	23	1	24	94	36	99	50	279	1365	2	1367	112	5	1465	4	36	221	1843
Washington, 1931	35	3	38	85	93	80	57	315	868	2	870	130	7	703	5	70	112	1027
West Virginia, '31	37	2	39	102	30	114	83	329	830	1	831	72	7	827	4	41	172	1123
Wisconsin, 1931	101	7	108	157	86	231	108	582	1796	5	1801	316	18	2150	18	210	421	3133
Dist. of Col., 1931	51	2	53	53	33	94	22	202	1157	8	1165	111	8	880	13	86	120	1218
Line Total, 1931	1120	106		3367	1646	3744	2252		36046	197		4959	583	37548	388	3704	6179	
Group Total, '31			1926					11009			36243							53361

*Not in production

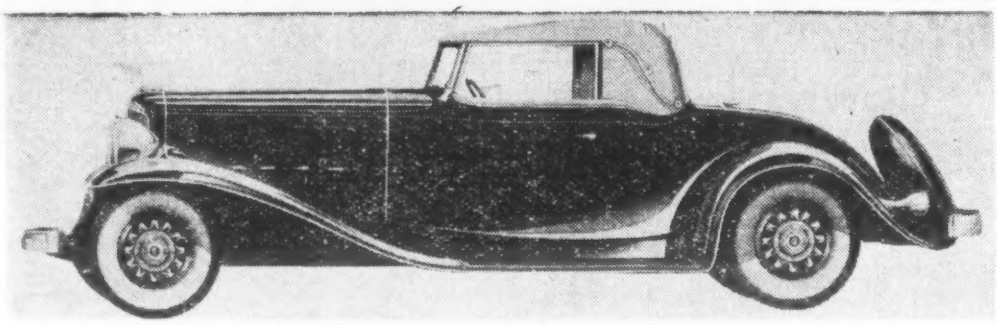
HAMLIN TO HANDLE DE VAUX IN SOUTHERN CALIFORNIA DISTRICT

(Continued from Page 1)

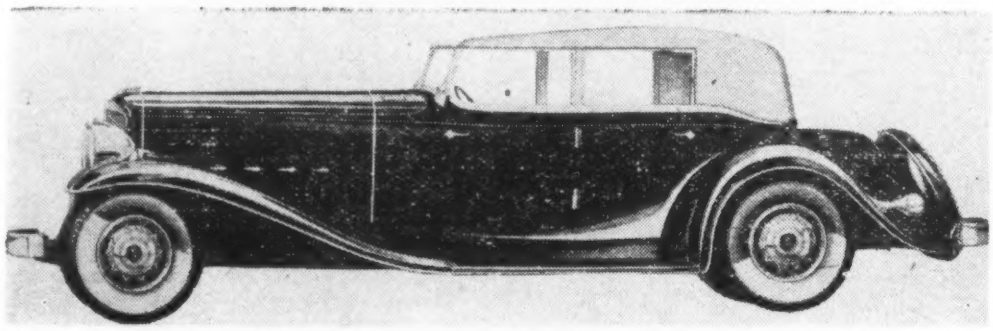
Continental-De Vaux during the past week are: Reo Worcester Company, Worcester, Mass.; Ted Booth Motor Company, distributor for Grand Rapids and the surrounding territory; Berryman Reo Company, Kansas City; Motor Mart, Inc., Houston, Tex.; Hartman Brothers, Saginaw, Mich., and Cowles Tolman & Sons, New Haven, Conn.

NEWARK STAMP AND DIE REPORTS BUSINESS GAIN

Newark, N. J., May 18.—Alexander McNab, president of the Newark Stamp and Die Works, Inc., manufacturer of steel stamps and brass dies, reports that activities in the two plants of the company are on the upgrade, and that orders this month so far have been larger than for any time since the first of the year. While there is an increase in sales, Mr. McNab says that the firm has been favored with many inquiries for prices, indicating that buyers are preparing to place orders. The tool department is employing more men than this time a year ago.



THE NEW NASH Special Eight convertible roadst er, $1,395. Similar convertible types are available on the Advanced Eight, Standard Eight and Big Six series



NEW NASH Advanced Eight custom type converti ble sedan, for five, at $1,875. Similar sedans are available on the Special Eight, Standard Eight and Big Six series

STEEL OUTLOOK SEEN IMPROVED

(Continued from Page 1)

weeks ago, while last week and this it has been at about 19 per cent.

"Rail production in the Chicago district is increasing slightly, while the Pittsburgh district rail mill will resume next week on an accumulation of releases. Fabricated structural steel lettings have been progressively diminishing since early April, and there is possibility of some delays in Federal work, which has had the most promising outlook."

CUNO ENGINEERING CO. EXPANDS OPERATIONS

Meriden, Conn., May 18.—An increase in production for the automotive field has made it necessary for the Cuno Engineering Company to acquire additional floor space for manufacturing purposes.

The company has taken over a section of a factory on South Vine Street, which will be used to supplement operations in the main plant, which is located on the same street.

The concern produces a wide variety of automotive specialties.

REGISTRATION STATISTICS, APRIL, 1932

Pennsylvania, Rhode Island, South Dakota, Virginia and Washington

States	HUDSON GROUP			STUDEBAKER GROUP				WILLYS-OV'R'D GR'P			NON-AFFILIATED MANUFACTURERS									State Totals
	Essex	Hudson	Totals	Pierce-Arrow	Rockne	Studebaker	Totals	Willys-Overland	Willys-Knight	Totals	De Vaux	Franklin	Graham	Hupmobile	Marmon	Nash	Packard	Reo	Miscella-neous	
Arkansas	6		6		1	1	2	2	1	3			3	6		8	4	1		409
Delaware	7	2	9		7	4	11	3		3			1	1		10	8		2	341
Florida	21	11	32	1	12	10	23	7	2	9	1	4	14	6	13	12	9	3	37	847
Idaho	3	3	6		5	6	11	4		4	1		4	1		9		2	4	242
Illinois	185	73	258	35	137	266	438	175	26	201	14	11	102	137	8	266	113	26	19	7,982
Indiana	121	68	189	8	80	169	257	127	8	135	3		49	34	7	49	32	3	15	3,696
Maryland	41	13	54	5	25	38	68	36	4	40		1	26	8		50	36	4	10	1,860
Michigan	201	110	311	10	90	75	175	71	5	76	6	2	75	76	4	88	65	39	12	5,116
Minnesota	57	26	83	7	46	83	136	115	16	131		2	39	35	1	67	31	6	4	3,231
Missouri	55	25	80	16	34	54	104	102	10	112	1	2	35	41	8	88	34	19	12	4,024
Montana	20	11	31		7	17	24	18	4	22	1		6	2		23	2	2	11	702
New Hampshire	26	12	38	1	19	26	46	10	1	11	1	3	7	1	3	43	10	6	1	821
North Carolina	36	16	52	1	18	11	30	16		16	5	1	4	5		5	8		17	1,427
North Dakota	6	1	7		8	5	13	30		30	1		1	2		10		1	1	524
Oregon	14	6	20	1	11	12	24	12	3	15	2	3	7	3		29	6	2	2	740
Pennsylvania	224	114	338	27	144	208	379	304	32	336	7	31	135	313	6	278	150	36	23	9,962
Rhode Island	32	10	42	11	16	25	52	20		20		4	20	14		33	15	2	8	1,097
South Carolina	8	5	13		1	5	6	8		8				11		3	2	2	2	657
South Dakota	2	4	6		8	12	20	10	2	12	1		3	4		11			3	410
Utah	7	7	14		8	9	17						8	1		10	4	1		281
Vermont	26	8	34	1	9	10	20	18	1	19	1	1	10	6		17	6	1	1	538
Virginia	54	10	64	3	23	18	44	23	3	23		3	15	22	1	33	14	1	5	1,758
Washington	17	17	34	3	32	43	78	18	3	21	1	3	24	17		48	14	7	7	1281
West Virginia	40	10	50	1	15	15	31	43	5	48	1		19	7		17	14	5	2	1,183
Wisconsin	108	48	156	5	42	74	121	97	12	109	7		27	145		147	26	6	7	3,064
Dist. of Columbia	43	8	51	3	2	39	44	13	1	14			22	15	1	55	27		1	1,407
Line Total	1360	618		139	800	1235		1282	139		54	71	656	913	52	1409	630	175	206	53,600
Group Total			1978				2174			1421										
Arkansas, 1931	4	1	5			9	9	14	1	15		1	11	3		14	3	1	2	964
Delaware, 1931	17	9	26	1		3	4	11	3	14		4	1	5	1	13	10	1	11	690
Florida, 1931	64	36	100	3		31	34	22	3	25		9	44	13	4	17	11	7	20	2,575
Idaho, 1931	10	4	14			16	16	8	1	9	2	1	6	1		11		4	3	649
Illinois, 1931	366	152	518	45		502	547	291	66	357	7	21	115	196	41	400	172	51	137	17,004
Indiana, 1931	306	111	417	11		265	276	290	19	309	1	6	59	90	35	110	39	25	38	9391
Maryland, 1931	87	41	128	10		74	84	70	11	81		5	26	43	3	56	18	4	28	3,738
Michigan, 1931	546	197	743	2		168	170	176	19	195	53		82	80	45	106	62	80	53	14,166
Minnesota, 1931	165	80	245	10		178	188	272	22	294		3	66	80	6	118	41	26	32	7,816
Missouri, 1931	124	47	171	28		108	136	158	26	184	1	8	53	44	31	127	25	11	116	6,886
Montana, 1931	29	12	41			22	22	39	2	41		1	2	9	3	23		4	15	1,108
N. Hampshire, '31	73	37	110	4		40	44	51	5	56	1	4	15	19	3	60	17	6	8	1,844
No. Carolina, '31	68	30	98	2		20	22	29	5	34	2		12	3	2	15	8	1	9	3,249
North Dakota, '31	7	4	11			27	27	67		67			8	3	3	19		2	3	1,400
Oregon, 1931	15	11	26	4		54	58	21	7	28		5	36	6	2	35	6	8	46	1,851
Pennsylvania, '31	629	225	854	42		454	496	515	113	628		65	218	264	72	456	167	55	120	19,947
Rhode Island, '31	73	22	95	11		54	65	29	6	35		8	31	26	2	44	18	25	12	1,988
So. Carolina, 1931	25	8	33	1		19	20	9	1	10			3	16		6	3	2	8	1,746
South Dakota, '31	10	8	18			25	25	41	3	44			8	9		15	2		16	1,190
Utah, 1931	14	12	26	1		16	17	20	1	21		2	20	14		27	4	5	8	887
Vermont, 1931	73	31	104	2		7	9	47	3	50		3	4	18	1	42	6		3	1,213
Virginia, 1931	88	30	118	4		42	46	42	11	53			25	40	14	29	17	9	14	3,878
Washington, 1931	42	19	61	2		72	74	64	11	75		3	24	47	4	16	14	9	36	2,613
West Virginia, '31	64	15	79	4		40	44	96	6	102			36	19	3	35	15	12	7	2,674
Wisconsin, 1931	212	69	281	10		181	191	212	17	229	9	7	51	37	13	208	25	11	41	6,727
Dist. of Col., 1931	56	17	73	8		62	70	22	7	29		6	32	41	7	46	36	3	27	3,008
Line Total, 1931	3167	1228		205	*	2489		2616	369		76	162	988	1126	295	2048	719	362	813	119,202
Group Total, '31		-	4395				2694			2985										

CAN'T BALANCE BUDGET BY TAXES DEPRESSING INDUSTRY, SAYS CHAPIN

(Continued from Page 1)

can get volume. New models have been brought out. Everything possible has been done to give the greatest values in car history.

"Now the secretary of the Treasury suggests a tax of not less than $18 to $25 upon every new car purchased, with additional taxes for repair parts, tires and accessories and lubricating oil.

"We must pass these levies on to our customers. The effect is that men with shortened budgets will be faced up in thousands of instances with the necessity of waiting another six months or more before they buy.

"That means decreased production, which means increased unemployment, which means decreased consumption.

"At no time in our history has there been such a need for prudent foresight in the laying of new tax burdens. The government cannot afford to undertake steps of this sort without weighing the economic effects.

"Every motor vehicle sold contains raw materials or fabricated goods drawn from every state in the Union.

"Every vehicle operated gives employment to a long string of men engaged in servicing, fueling and using the machine.

"There is no major industry in the country which does not reflect the ups and downs of the motor industry. All are vitally interested in its success.

"Similarly the user is concerned by the costs, all of which, with the exception of taxation, are down.

"It is a curious thing that Treasury officials still think of the vehicle as of the 'semi-luxury' type and of its owner as a wealthy man.

"Actually 93 pr cent. of all cars sold cost less than $1,000 and 85 per cent. less than $750 wholesale.

"Most of the owners today have incomes of less than $3,000 a year, and there are many more motorists who have less than $2,000 a year than there are who have $5,000 or more.

"The motor vehicle has become a modern-day necessity to those who use it, to the consumer, the distributor, the dealer, the supply agency, the farmer and the manufacturer.

"Any discrimination against it would hit all these classes and would deprive the Treasury of much needed revenue from income taxes.

"For these reasons, I am confident the Senate will not accept the automotive levies."

GAS TAX REVENUE GAINS IN BAY STATE

Boston, Mass., May 18.—Massachusetts motorists are using more gas than ever before Commissioner Henry F. Long of the department of corporations and taxes revealed today.

During April 50,364,128 gallons of taxable gas were used which will net the Commonwealth $1,510,923.84 for its highway fund. This compares with 47,436,994 gallons used in April, 1931, and 45,243,707 in April, 1930. In April, 1929, the first April the law was in effect, the total was 37,902,778.

The four months of this year, Commissioner Long reports, showed a taxable use of 159,286,805 gallons of gasoline as compared with 148,364,459 in the same period last year and 141,676,845 in the same period in 1930.

"This all indicates," said Commissioner Long, "that the gasoline tax, which is the nearest approach to a sales tax that Massachusetts has, is still maintaing its average and that the people of the Commonwealth are not objecting to the point of putting up their automobiles."

AUTOMOTIVE COMPANIES TAKE GROUP INSURANCE

New York, May 18.—Group life insurance policies for the protection of employees of the Foster Industries, Inc., and Associated Companies of Lansing, Mich., and Jones & Maley, Inc., of Indianapolis, Ind., both engaged in the automobile industry, have recently been acquired.

MAJOR SPECIFICATIONS AND MECHANICAL DETAILS

Make and Model	Weight—5-P. Sedan	Wheel Base	Engine Make	Thermostat Used	Valve Arrangement	Cylinders	Bore and Stroke	Piston Disp.	Compression Ratio	Tax H. P.	Brake, H.P. and Peak R. P. M.	Pist. Make or Material	No. Main Br.	Oil Purifier	Fuel Cleaner	Carburetor	Air Cleaner
Auburn 8-100	——	127-136	Lyc	Dole	L	8	3 x4¾	268.6	2.56	28.8	18@3400	*Alum	5	Pur	No	Str	No
Auburn 12-160	——	133	Lyc	Dole	O	12	3½x4¼	391.0	5.50	46.8	160@3400	*Alum	4	Pur	Ste	Str	—
Austin	§1150	75	Own	No	L	4	2.2x3	45.6	5.10	7.8	13@3000	Alum	2	No	No	Til	No
Buick 32-50	3450	114	Own	Bish-Bab	O	8	2⅞x4¼	230.4	4.65	27.61	78@3200	CI	5	AC	AC	Mar	AC
Buick 32-60	3980	118	Own	Bish-Bab	O	8	3⅛x4⅝	272.6	4.63	30.02	90@3000	CI	5	AC	AC	Mar	AC
Buick 32-80	4450	126	Own	Bish-Bab	O	8	3⅛x5	344.8	4.40	35.12	104@2900	CI	5	AC	AC	Mar	AC
Buick 32-90	4565	134	Own	Bish-Bab	O	8	3⅛x5	344.8	4.40	35.12	104@2900	CI	5	AC	AC	Mar	AC
Cadillac 355 B	4885	134-140	Own	Har	L	8	3⅜x4½	353.0	5.38	36.4	115@3000	CI	3	AC	AC	Own	AC
Cadillac 370 B	5175	134-140	Own	Har	O	12	3½x4	368.0	5.30	46.9	135@3400	CI	4	Cuno	AC	DL	AC
Cadillac 452 B	5625	143-149	Own	Har	O	16	3 x4	452.0	5.36	57.5	165@3400	CI	5	Cuno	AC	DL	AC
Chevrolet	——	109	Own	No	O	6	3⅛x3¾	194	5.20	26.3	60@3000	CI	3	—	—	Car	AC
Chrysler 6	3120	116	§Own	Yes	L	6	3¼x4½	223.9	5.35	25.35	82@3400	*Alum	4	Pur	Yes	B & B	Yes
Chrysler 8	3860	125	§Own	Yes	L	8	3¼x4½	298.6	5.20	33.80	100@3400	*Alum	5	Pur	Yes	Str	Yes
Chrysler Imp. 8	——	135	§Own	Yes	L	8	3½x5	384.8	5.20	39.20	125@3200	*Alum	9	Pur	Yes	Str	Yes
Chrysler Imp. 8 cus.	——	146	§Own	Yes	L	8	3½x5	384.8	5.20	39.20	125@3200	*Alum	9	Pur	Yes	Str	Yes
Cord (Fr. Wh. D.)	4620	137½	Lyc	Dole	L	8	3¼x4½	298.6	5.25	33.8	115@3300	*Alum	5	Pur	AC	Sch	No
De Soto Six	3008	113	§Own	Yes	L	6	3¼x4¼	211.5	5.35	25.35	75@3400	*Alum	4	Pur	Yes	B & B	Yes
De Vaux 6-80	2810	114	Con	Dole	L	6	3⅜x4	214.7	5.20	27.34	75@3600	Alum	4	—	Yes	Til	AC
Dodge Six D L	3084	114¼	§Own	Yes	L	6	3¼x4⅜	217.7	5.35	25.35	79@3400	Alum	4	Pur	Yes	Car	Yes
Dodge Eight D K	3488	122	§Own	Yes	L	8	3¼x4¼	282.1	5.20	33.80	90@3400	Alum	5	Pur	Yes	Str	Yes
Essex-Gr. Su. 6	——	113	†Own	——	L	6	2⅞x4¾	193.0	5.50	20.7	70@3200	Alum	3	No	Ste	Mar	AC
Ford A	2357	106	Own	No	L	4	3¾x4¼	200.5	4.60	24.03	50@2600	Alum	3	—	—	Zen	—
Ford V8	†2447	106	Own	No	L	8	3⅛x3¾	220.0	5.50	30.0	65@3400	Alum	3	—	—	DL	—
Franklin Airman	——	132	†Own	Ful	O	6	3½x4¾	——	5.10	——	100@3100	*Alum	7	Pur	Yes	Str	Yes
Franklin V-12	——	144	†Own	Ful	O	12	3¼x4	398.0	5.12	——	150@3100	*Alum	7	Pur	Yes	Str	Yes
Graham 6	3205	113	Own	Yes	L	6	3⅛x4½	207	5.45	23.4	70@3200	*Alum	7	No	AC	Sch	AC
Graham 8	3665	123	Own	Bish-Bab	L	8	3⅛x4	245.4	6.50	31.25	90@3400	*Alum	5	AC	AC	DL	AC
Hudson Greater 8	——	119-126-132	†Own	——	L	8	3 x4½	254.1	5.80	28.8	101@3600	Alum	5	No	Ste	Mar	AC
Hupmobile 216	3115	116	Own	Bish-Bab	L	6	3⅜x4¼	228.1	5.00	27.34	75@3200	*Alum	4	**	Ste	Str	AC
Hupmobile 222	3580	122	Own	Bish-Bab	L	8	2⅞x4⅝	250.7	5.40	27.61	93@3200	Alum	5	Pur	Ste	Str	AC
Hupmobile 226	3755	126	Own	Bish-Bab	L	8	3⅛x4¾	279.9	5.47	30.10	103@3200	Alum	5	Pur	Ste	Str	AC
La Salle 345 B	4840	130-136	Own	Har	L	8	3⅜x4⅛	353.0	5.38	36.4	115@3000	CI	3	AC	AC	Own	AC
Lincoln V-8	5430	136	Own	Yes	L	8	3½x5	384.0	5.23	39.2	125@2900	Alum	5	No	AC	Str	AC
Lincoln V-12	5750	145	Own	Yes	L	12	3¼x4½	448.0	5.25	50.7	150@3400	Alum	7	No	AC	Str	AC
Marmon 8	3500	125	Own	Yes	L	8	3¼x4¾	315.2	5.50	33.8	125@3400	Alum	5	Flo	AC	Str	AC
Marmon 16	5360	145	Own	Pines	O	16	3⅛x4	490.8	5.75	62.5	200@3400	Alum	5	†	AC	Str	AC
Nash Big Six	3200	116	Own	Bish-Bab	L	6	3⅛x4⅝	201.3	5.10	23.4	70@3000	*Alum	7	Pur	AC	Str	AC
Nash Stand. Eight	3400	121	Own	Bish-Bab	L	8	3 x4⅜	247.4	5.10	28.8	85@3200	*Alum	9	Pur	AC	Str	AC
Nash Spec. Eight	3870	128	Own	Bish-Bab	O	8	3⅛x4¼	260.8	5.25	31.2	100@3400	*Alum	9	Pur	AC	Str	AC
Nash Adv. Eight	4350	133	Own	Bish-Bab	O	8	3⅜x4½	322.0	5.25	36.4	125@3600	*Alum	9	Pur	AC	Str	AC
Nash Ambas. Eight	4510	142	Own	Bish-Bab	O	8	3⅜x4½	322.0	5.25	36.4	125@3600	*Alum	9	Pur	AC	Str	AC
Oldsmobile F-32	3035	116½	Own	No	L	6	3⅛x4⅛	213.3	5.80	26.3	74@3200	CI	4	AC	AC	Str	AC
Oldsmobile L-32	3165	116½	Own	No	L	8	3 x4¼	240.3	5.90	28.8	87@3350	CI	5	AC	AC	Str	AC
Packard Twin Six	5225	142-147	Own	Yes	L	12	3⅛x4	445.5	6.00	56.0	160@3200	*Alum	4	Yes	Yes	Own	AC
Packard Stan. 8	4570	130-137	Own	Yes	L	8	3⅛x5	320.0	6.00	32.5	110@3200	*Alum	9	Yes	Yes	Own	AC
Packard De L. 8	5045	142-147	Own	Yes	L	8	3½x5	384.8	6.00	39.2	135@3200	*Alum	9	Yes	Yes	Own	AC
Packard Light 8	4115	127¾	Own	Yes	L	8	3⅛x5	320.0	6.00	32.50	110@3200	*Alum	9	Yes	Yes	Own	AC
Peerless De L. Mas.	4521	125	Con	Bish-Bab	L	8	3⅜x4½	322	5.00	36.45	115@3200	*Alum	5	Pur	AC	Sch	AC
Peerless De L. Cus.	4766	138	Con	Bish-Bab	L	8	3⅜x4½	322	5.00	36.45	120@3200	*Alum	5	Pur	AC	Sch	AC
Pierce-Arrow 54	4819	137-142	Own	Pines	L	8	3½x4¾	366	5.05	39.2	125@3000	*Alum	9	Pur	Ste	Str	AC
Pierce-Arrow 52	5080	142-147	Own	Pines	L	12	3⅜x4	429	5.05	54.6	150@3200	*Alum	7	Pur	Ste	Str	AC
Pierce-Arrow 53	5395	137-142	Own	Pines	L	12	3¼x4	398	5.05	50.7	140@3200	*Alum	7	Pur	Ste	Str	AC
Plymouth	2875	112	§Own	No	L	4	3⅝x4¾	196.1	4.90	21.03	65@3000	Alum	3	Yes	AC	Car	Yes
Pontiac 6	2870	114	Own	Yes	L	6	3⅛x3⅞	200.0	5.10	26.3	65@3200	CI	3	No	AC	Mar	Yes
Pontiac V-8	3225	117	Own	Yes	H	8	3⅛x3⅝	251.0	5.20	37.8	85@3200	CI	3	No	AC	Mar	Yes
Reo Fly. Cloud "S"	3405	117	Own	Yes	L	6	3⅛x5	230.0	5.30	23.4	80@3200	Lo-Ex	7	Yes	Yes	Zen	Yes
Reo Royale Cust.	4650	135	Own	Pines	L	8	3⅜x5	358	5.30	36.48	125@3300	Alum	9	Han	AC	Sch	Own
Reo Royale	4375	131	Own	Pines	L	8	3⅜x5	358	5.30	36.48	125@3300	Alum	9	Han	AC	Sch	Own
Reo 8-25	4050	125	Own	Yes	L	8	3 x4¾	268.6	5.37	28.8	90@3300	*Alum	5	Han	V S	Sch	Un
Rockne 6-65	2595	110	Own	Dole	L	6	3⅛x4⅛	189.8	5.00	23.4	66@3200	CI	4	No	AC	Str	No
Rockne 6-75	3000	114	Own	Dole	L	6	3¼x4⅛	205.3	5.00	25.4	72@3200	CI	4	Own	AC	Str	No
Studebaker 6-55	3170	117	Own	Dole	L	6	3¼x4⅝	230.0	5.00	25.4	80@3200	CI	4	No	Ste	Str	No
Studebaker Dict. 62	3240	117	Own	Bish-Bab	L	8	3⅛x3⅝	221.0	5.00	30.0	85@3200	CI	9	Pur	Ste	Str	AC
Studebaker Com. 71	3545	125	Own	Bish-Bab	L	8	3⅛x4¼	250.4	5.20	30.0	101@3200	*Alum	9	Pur	Ste	Str	AC
Studebaker Pres. 91	4260	135	Own	Dole	L	8	3½x4⅜	337.0	5.10	39.2	122@3200	*Alum	9	Han	Ste	Str	AM
Stutz LAA	4383	127½	Own	No	O	6	3⅜x4½	241.5	5.50	27.3	85@3150	*Alum	7	Pur	AC	Zen	Un
Stutz SV-16	4885	134½-145	Own	No	O	8	3⅜x4½	322	5.50	36.4	113@3300	*Alum	9	Pur	AC	Zen	AM
Stutz DV 32	5281	134½-145	Own	Bish-Bab	O	8	3⅜x4½	322	5.10	36.4	156@3900	*Alum	9	Pur	Ste	Str	AC
Willys-Ov'land 6-90	2814	113	Own	Yes	L	6	3¼x3⅞	193.0	5.26	25.35	65@3400	CI	4	No	AC	Til	Til
Willys-Ov'land 8-88	3250	121	Own	Yes	L	8	3⅛x4	245.4	5.26	31.25	80@3200	CI	5	No	AC	Til	AC
Willys-Kni. 66-D	3775	121	Own	Yes	K	6	3⅜x4¾	255.0	5.50	27.34	87@3200	*Alum	7	Pur	Til	Til	AC
Willys-Knight 95	3031	113	Own	Yes	K	6	2⅞x4⅜	177.9	5.55	20.70	60@3400	*Alum	7	Pur	AC	Til	AC

FINANCIAL NEWS

GENERAL AVIATION

New York, May 18.—General Aviation Corp. and subsidiaries, controlled by General Motors Corp., reports for the year ended December 31 last a net loss of $2,232,735 after expenses, inventory adjustments, write-off of deferred experimental expenses, etc.

In 1930 the company reported a net loss of $2,133,858 after inventory adjustments, write-down of deferred experimental expenses, etc., to commercial value provision for special contingencies, etc.

CATERPILLAR TRACTOR

San Francisco, May 18. — The Caterpillar Tractor Company's net sales in April amounted to $1,747,481, with net profit applicable to dividends, $48,079. As previously reported, net sales for the first three months of this year amounted to $3,501,647, and net loss after all charges was $510,124.

DELAWARE AVIATION

Wilmington, Del., May 18.—Aviation Corp. of Delaware and subsidiaries report for the quarter ended March 31 last a net loss of $823,872 after depreciation, expenses of parent company, loss on liquidation of flying equipment and loss on sales of securities amounting to $264,548.

In the first quarter of 1931 the company reported a net loss of $334,436 after depreciation, expenses and after promotion of losses of controlled companies not consolidated.

BUDD WHEEL QUARTER

Philadelphia, May 18. — Budd Wheel Company reports for quarter ended March 31, 1932, net loss of $450,166 after interest, depreciation, etc. This compares with net profit of $214,079, equivalent after dividend requirements on 7 per cent. preferred stock, to 19 cents a share on 990,675 no-par shares of common stock, in the first quarter of 1931.

E. G. BUDD MFG. CO

Philadelphia, May 18.—Edward G. Budd Manufacturing Company (automobile bodies, accessories, etc.), reports for quarter ended March 31, 1932, net loss of $541,346 after depreciation, interest, etc. This compares with net profit of $28,020, equivalent to 45 cents a share on 62,590 shares (par $100) of 7 per cent. preferred stock, in first quarter of 1931.

GENERAL ELECTRIC

New York, May 18.—Second quarter profits of General Electric Company will reflect an improved adjustment of expenses to a reduced volume of business. With a retrenchment program mapped, the company delayed some possible economies in the hope that business would develop in sufficient volume to make the more drastic economies unnecessary, but, as incoming orders continued to be without improvement, the company went further during the second quarter in cutting expenses.

APPROVES BUS LINE

Trenton, N. J., May 18. — The State Board of Public Utility Commissioners approved today the operation by the Boro Buses-Rollo Transit Corporation of four buses between Atlantic Highlands and Matawan in conjunction with boat service from New York. The Central Railroad urged the board to permit the substitution of buses for trains as providing a more flexible service and more frequent trips.

CAR MAKERS APPEAL TO MILADY'S INTEREST THROUGH UPHOLSTERY

New York, May 18.—Automobile manufacturers realize that it is as necessary, if not more so, to appeal to the tastes of the women in the motor car family as it is to the men, and accordingly are equally as concerned today with the upholstery of the automobile they produce as they are with the engine which strikes the convincing note with the men.

This consideration is said to have resulted in a marked increase in the use of mohair velvet fabrics, which afford styling, comfort, durability, richness of appearance and a feeling of luxury. Mohair velvet fabrics in automobiles today have become an accepted upholstery standard.

Ease of cleaning mohair is said to appeal to women automobile buyers and users. Dirt has a tendency to diffuse into the base of the fabric rather than show on the surface, since only the tips of the upright threads are exposed.

OF PRESENT AMERICAN PASSENGER CAR MODELS

Make and Model	Front End Drive	Ignition System	Gen. and Starter	Clutch	Transmission: Make	Transmission: Speeds	Transmission: Type	Universals	Rear Axle	Ratio	Brakes	Steering Gear	Springs Rear	Spring Shackles	Chassis Lubric.	Tires
Auburn 8-100	Chain	Del-R	*Del-R-S	Long	D	3	SM-LGS-F	U	Col	*4.70	M	Ross	S 56¾	Own	Bijur	17x6.00
Auburn 12-160	Link	Del-R	*Del-R-S	Long	D	3	SM-LGS-F	M	Col ½	*4.55	Bendix	Ross	S 56¾	Own	Bijur	*17x6.00
Austin	Gear	Aut-L	*Aut-L	Rock	WG	3	——	S	Sal ½	5.25	M	Say-B	Cant	Own	Al-Z	18x3.75
Buick 32-50	Tex	Del-R	Del-R	*Own	O	3	SM-BW-F	O	Own ½	4.60	Own	Sag	S 56	Tryon	Al-Z	18x5 50
Buick 32-60	Tex	Del-R	Del-R	*Own	O	3	SM-BW-F	O	Own ¾	4.54	Own	Sag	S 55¼	Own	Al-Z	18x6.00
Buick 32-80	Tex	Del-R	Del-R	*Own	O	3	SM-BW-F	O	Own ¾	4.27	Own	Sag	S 58⅞	Own	Al-Z	18x7.00
Buick 32-90	Tex	Del-R	Del-R	*Own	O	3	SM-BW-F	O	Own ¾	4.27	Own	Sag	S 58⅞	Own	Al-Z	18x7.00
Cadillac 355 B	Morse	Del-R	Del-R	Own	O	3	SM	S	Own ¾	4.60	Own M	Sag	S 58	Own	Alem	17x7 00
Cadillac 370 B	Morse	Del-R	Del-R	Own	O	3	SM	S	Ov n ¾	4.80	Own M	Sag	S 58	Own	Alem	17x7.50
Cadillac 452 B	Morse	Del-R	Del-R	Own	O	3	SM	S	Own ⅝	4.64	Own M	Sag	S 60	Own	Alem	18x7.50
Chevrolet	—	Del-R	*Del-R	Own	O	3	SM-F	—	Own ½	——	—	Sag	S 54	——	Alem	18x5.25
Chrysler 6	Chain	Del-R	Del-R	*—	O	3	—— F	—	Own ½	4.60	H	Own	S 53⅜	——	Alem	18x5.50
Chrysler 8	Chain	Del-R	Del-R	*—	O	4	—— F	—	Own ½	4.30	H	Gem	S 54⅝	——	Alem	17x6.50
Chrysler Imp. 8	Chain	Del-R	Del-R	*—	O	4	—— F	—	Own ½	4.10	H	Gem	S 57½	——	Al-Z	17x7.00
Chrysler Imp. 8 Cus.	Chain	Del-R	Del-R	*—	O	4	—— F	—	Own ½	4.10	H	Gem	S 57½	——	Al-Z	17x7.50
Cord (Fr. Wh. Dr.)	Link	Del-R	*Del-R	Long	D	3	——	*	Col F	4.80	H	Gem	S 62	Own	Bijur	18x7.00
De Soto Six	Chain	Del-R	Del-R	*Own	O	3	—— F	S	Own ½	4.62	H	Own	S 53⅜	——	Alem	18x5.25
De Vaux 6-80	Morse	Aut-L	*Aut-L	Borg	W	3	——	S	‡AD ½	4.40	M	†W	S 54¼	Tryon	Al-Z	19x5.25
Dodge Six D L	Chain	Del-R	—	—	O	3	—— F	—	Own ½	4.60	H	Own	S 54⅞	——	Al-Z	18x5 50
Dodge Eight D K	Chain	Del-R	Del-R	*—	O	3	—— F	—	Own ½	4.10	H	Gem	S 55	——	Al-Z	18x6 00
Essex Gr. Su. 6	Morse	Aut-L	*Aut-L-S	Own	O	3	SM-WG-F	S	Own ½	4.63	Bendix	Gem	S 54⅛	Own	Alem	18x5.25
Ford A	Var-G	Own	*Own	Own	O	3	SM	O	Own ¾	4.11	M	Gem	S-Tr 39	Own	Al-Z	18x5.25
Ford V8	Var-G	Own	*Own	Own	O	3	SM	O	Own ¾	4.11	M	Gem	S-Tr	Own	Al-Z	18x5.25
Franklin Airman	Chain	Del-R	*Del-R-S	—	W	3	SM-BW-F	M	— ½	4.73	H	Gem	El 42	——	Al-Z	19x6 50
Franklin V-12	Chain	Del-R	*Del-R-S	Long	W	3	SM-BW-F	M	Col ½	4.45	H	Ross	S 60	Fafnir	Al-Z	17x7.50
Graham 6	Link	Del-R	Del-R	Long	WG	3	WG-F	U	Sal ½	4.45	H	Ross	S 54	ERS	Al-Z	17x5.50
Graham 8	Link	Del-R	Del-R	Long	WG	3	SM-WG-F	S	Sal ½	4.30	H	Ross	S 54	ERS	Al-Z	17x6 00
Hudson Greater 8	Morse	Aut-L	*Aut-L-S	Own	O	3	SM-WG-F	S	Own ½	†4.63	Bendix	Gem	S 54⅛	Own	Alem	*17x6.00
Hupmobile 216	Chain	Aut-L	*A-L-S-§	Borg	WG	3	SM-WG-F	M	Spic ½	4.54	M	Ross	S 53	Tryon	Al-Z	18x5 50
Hupmobile 222	Morse	Aut-L	*A-L-S-§	Borg	WG	3	SM-WG-F	U	Own ½	4.36	M	Gem	S 57½	Rub-B	Al-Z	17x6.00
Hupmobile 226	More	Aut-L	*A-L-S-§	Long	D	3	SM-DG-F	U	Own ½	4.36	M	Gem	S 57½	Rub-B	Al-Z	17x6.50
La Salle 345 B	Morse	Del-R	Del-R	Own	O	3	SM	S	Own ¾	4.60	Own M	Sag	S 58	Own	Alem	17x7.00
Lincoln V-8	Chain	Aut-L	*Aut-L	Long	O	3	SM-F	S	Own F	4.58	*Bendix	Own	S 62	Own	Alem	18x7.00
Lincoln V-12	Chain	Aut-L	*Aut-L	Long	O	3	SM-F	S	Own F	4.58	*Bendix	Own	S 62	Own	Alem	18x7.50
Marmon 8	Diam	Del-R	*Del-R	*—	D	3	SM	S	Spic ½	4.08	Bendix	Ross	S 57	Tryon	Alem	18x6.00
Marmon 16	Diam	Del-R	Del-R	Rus	M	3	SM	S	Spic ½	3.78	Bendix	Ross	S 59½	**	Alem	18x7.00
Nash Big Six	Chain	Aut-L	*A-L-S-§	Borg	O	3	SM-DG-F	O	Own ½	4.70	M	Ross	S 54	ERS	Alem	18x5.25
Nash Stand. Eight	Chain	Aut-L	*A-L-S-§	Borg	O	3	SM-DG-F	O	Own ½	4.44	M	Ross	S 54	ERS	Alem	18x5.50
Nash Spec. Eight	Chain	*Aut-L	*A-L-S-§	Borg	O	3	SM-DG-F	O	Own ½	4.43	Bendix	Gem	S 55¾	*	Bijur	17x6 50
Nash Adv. Eight	Chain	*Aut-L	*A-L-S-§	Borg	O	3	SM-DG-F	O	Own ½	4.50	Bendix	Gem	S 57⅛	*	Bijur	18x7.00
Nash Ambas. Eight	Chain	*Aut-L	*A-L-S-§	Borg	O	3	SM-DG-F	O	Own ½	4.50	Bendix	Gem	S 57⅛	*	Bijur	18x7.00
Oldsmobile F-32	Chain	Del-R	Del-R	Borg	M	3	SM-BW-F	S	Own ½	4.56	Bendix	Sag	S 54½	Tryon	Al-Z	17x6.00
Oldsmobile L-32	Chain	Del-R	Del-R	Borg	M	3	SM-BW-F	S	Own ½	4.77	Bendix	Sag	S 54½	Tryon	Al-Z	17x6.00
Packard Twin Six	Morse	Aut-L	*Dyn	*Long	O	3	SM	M	Own ½	4.69	M	Own	S 60½	Own	Bijur	18x7.50
Packard Stan. 8	Morse	N E	*Dyn	Long	O	3	SM	M	Own ½	4.66	M	Own	S 60½	Own	Bijur	6.50x19
Packard De L. 8	Morse	N E	*Dyn	Long	O	3	SM	M	Own ½	4.66	M	Own	S 60½	Owr	Bijur	7.00x19
Packard Light 8	Morse	N E	*Dyn	*Long	O	3	SM	S	Own ½	4.66	M	Own	S 56	Own	Alem	17x6.50
Peerless De L. Mas.	Morse	Aut-L	*Aut-L	Rock	WG	3	WG-F	S	Sal ½	4.45	Bendix	Ross	S 60	Rub B	Alem	31x6.00
Peerless De L. Cus.	Morse	Aut-L	*Aut-L	Rock	WG	3	WG-F	S	Sal ½	4.80	Bendix	Ross	S 60	Rub B	Alem	31x6.50
Pierce-Arrow 54	Chain	Del-R	*Del-R-S	Long	O	3	SM-F	S	Own ½	4.42	Bendix	Ross	S 61	Faf	Myers	18x6.50
Pierce-Arrow 52	Chain	Del-R	*Del-R-S	Long	O	3	SM-F	S	Own ½	4.42	Bendix	Ross	S 61	Faf	Myers	18x7.00
Pierce-Arrow 53	Chain	Del-R	*Del-R-S	Long	O	3	SM-F	S	Own ½	4.58	Bendix	Ross	S 61	Faf	Myers	18x7 00
Plymouth	Var	Del-R	Del-R	*Own	O	3	BW-F	O	Own ½	4.33	H	War	S 53⅜	——	Al-Z	18x5.25
Pontiac 6	Chain	Del-R	Del-R	Own	M	3	SM-BW-F	M	Own ½	4.55	Bendix	Sag	S 54	Inlox	Al-Z	18x5.25
Pontiac V-8	Link	Del-R	Del-R	Own	M	3	SM-BW-F	M	Own ½	4.22	Bendix	Sag	S 54½	Inlox	Al-Z	17x6.00
Reo Fly. Cloud "S"	Chain	Del-R	*Del-R-S	Long	O	3	SM-F	S	Own ½	4.60	H	Ross	S 55	Tryon	AL-Z	17x5.50
Reo Royale Cust.	Morse	Del-R	Del-R-§	Long	O	3	SHG	U	Own ½	4.07	H	Ross	S 57½	Own	Far	6.50x18
Reo Royale	Morse	Del-R	Del-R-§	Long	O	3	SHG	U	Own ½	4.07	H	Ross	S 57½	Own	Al-Z	6.50x18
Reo 8-25	Link	Del-R	*Del-R	Long	O	3	SHG	U	Own ½	4.90	H	Ross	S 55¾	Own	Al-Z	17x6.50
Rockne 6-65	Morse	Aut-L	*Aut-L-S	Borg	WG	3	SM-BW-F	M	Spic ½	4.55	Bendix	Ross	S 54	Tryon	Al-Z	18x5.25
Rockne 6-75	Chain	Aut-L	*Aut-L-S	Long	WG	3	SM-BW-F	M	Own ½	4.73	Bendix	Ross	S 54	Tryon	Al-Z	18x5.50
Studebaker 6-55	Chain	Del-R	*Del-R-S	Long	O	3	SM-BW-F	S	Own ½	4.27	Bendix	Ross	S 54	Tryon	Alem	18x5.50
Studebaker Dict. 62	Cel	Del-R	*Del-R-S	Long	O	3	SM-BW-F	S	Own ½	4.73	Bendix	Ross	S 54	Tryon	Alem	18x5.50
Studebaker Com. 71	Cel	Del-R	*Del-R-S	Long	O	3	SM-BW-F	S	Own ½	4.73	Bendix	Ross	S 56	Faf	Alem	18x6.00
Studebaker Pres. 91	Var-G	Del-R	*Del-R-S	Borg	O	3	SM-BW-F	S	Own ½	4.31	Bendix	Ross	S 60	Faf	Alem	18x6.50
Stutz LAA	Link	Del-R	Del-R	Borg	D	4	——	U	Sal ½	5.10	H	Gem	S 60	Own	Bijur	19x6.50
Stutz SV-16	Link	Del-R	Del-R	Long	M	3	SM	M	Tim ½	4.75	H	Gem	S 62¾	Own	Bijur	18x7.00
Stutz DV-32	Link	Del-R	Del-R	Long	M	3	SM	M	Tim ½	4.50	H	Gem	S 62¾	Own	Bijur	18x7.00
Willys-Ov'land 6-90	Link	Aut-L	*Aut-L	Own	O	3	O-F	S	Own ½	4.60	Bendix	Own	S 51	Tryon	Alem	18x5.25
Willys-Ov'land 8-88	Link	Aut-L	*Aut-L	Borg	O	3	O-F	S	Own ½	4.40	Bendix	Ross	S 56	Tryon	Alem	18x5.50
Willys-Kni. 66-D	Link	Aut-L	*Aut-L	Rock	O	3	O-F	S	Own ½	4.18	Bendix	Ross	S 56	Tryon	Alem	17x6.00
Willys-Knight 95	Link	Aut-L	*Aut-L	Own	O	3	O-F	S	Own ½	4.89	Bendix	Gem	S 51	Tryon	Alem	18x5.50

KEY TO ABBREVATIONS

Weight—§Austin standard 2 passenger coupe. Stutz DV 145-inch wheel base weighs 5,352. †Tudor sedan.

Engine Make—Con. Continental; Lyc. Lycoming. *Air-cooled with spot temperature control. †Thermo syphon water circulation. §Floating power.

Thermostat—Bish-Bab. Bishop & Babcock. Dole, Dole Valve Co., Chicago, Ill.; Ful, Fulton Co.; Har, Harrison; Pines, Pines Winterfront Var, various makes.

Valve Arrangement—L, L head; H, horizontal O, overhead. K, sleeve valve. LV, V-type L head.

Piston Material—*Alum, aluminum with invar struts Alum, aluminum alloy; CI cast iron; S St, semi-steel; Lo-Ex, Aluminum Corporation of America.

Oil Purifier—Wai, Wall; Han, Handy; AC, AC Spark Plug Company; Ste, Stewart-Warner; Ski, Skinner; Flo, Floato; Cuno, Cuno Engineering Corp; Pur, Purolator *Using both Floato and Skinner. †Using AC with Floato attachment. **Using both AC and Purolator.

Fuel Cleaner—AC, AC Spark Plug Co.; Gas, Gascolator; Ste, Stewart-Warner; Til Tillotson; V-S, Van Sicklen

Carburetor—Sch, Wheeler Schebler; Zen, Zenith; Mar, Marvel; Car, Carter; Str, Stromberg; DL, Detroit Lubricator; Til Tillotson; B&B, Borg & Beck.

Air Cleaner—AC, AC Spark Plug Company; AM, Air Maze; Un, United; Til, Tillotson

Front End Drive—Link, Link Belt; Tex, Texolite; Cel, Celeron; Diam, Diamond Chain; Morse, Morse Chain Company; Var, various makes of chains; Var-G various makes of gears.

Ignition, Generator and Starter—Aut-L, Auto-Lite; A-L, Auto-Lite; Del-R, Delco-Remy; Dyn, Owen-Dyneto Corp.; N E, North East. *Nash.—Indicates twin ignition. *Bendix starter used. S—Startix equipped. §Startix optional equipment.

Clutch—Borg, Borg & Beck; Br-L, Brown-Lipe; Rock, Rockford Machine; Long, Long Clutch Company; Rus, Russell Mfg. Co. *Bendix Clutch Control.

Transmission Make—D, Detroit Gear; WG, Warner Gear Company; M, Muncie Gear Company; O, Own; N, New Process Gear Corp.; W, Warner Corp. *Franklin Transcontinent models are equipped with both Warner and Detroit 3 or 4 speed gear sets, according to body type.

Transmission Type—DG, Detroit Gear & Machine Co.; LGS, The LGS Corp.; F, Free Wheeling; SM, Synchro Mesh; BW Borg-Warner; NP—New Process Gear Corp.; WG, Warner Gear Co.; SHG, Synchronized Herringbone Gear.

Universals—U, Detroit Universal Products; S, Spicer Mfg. Corp.; O, Own, M, Mechanics Universal Joint Company. *Cord using Detroit Universal Products and Mechanical Universal Joint Co.

Rear Axle—Col Columbia; Sal, Salisbury; Spic, Spicer Mfg. Corp.; Tim, Timken; N.P., New Process Gear Corp.; ½, Semi-floating; ¾, ¾ floating; F, Full floating; ‡Adams; used on custom models.

Ratio—*Dual ratio optional; Hudson 132-in. wheel base models have rear axle ratio of 5.10

Brakes—H, hydraulic; M, mechanical; Bendix, Bendix Brake Corp. *Equipped with Vacuum Booster.

Steering Gear—Gem, Gemmer; Ross, Ross Gear and Tool Company; Sag, Saginaw; Say-B Saylor-Beall Manufacturing Company; War, Warner; N.P., New Process Gear Corp †Ross used on custom models

Rear Springs—S, semi-elliptic; El, full elliptic; Cant, semi-cantilever; S-Tr semi-transverse

Spring Shackles—Tryon, Willys-Morrow Company Rub B, Rubber Shock Insulator Company; Faf, Fafnir Bearing Company; ERS, Eaton Products, Inc.; Inlox—Inland Mfg. Co.; *Tryon, front, ERS, rear. *Own, front, ERS, rear. **Using both Rubber-B and Fafnir.

Chassis Lubricator—Alem, Alemite; Al-Z, Alemite Zerk; Bijur, Bijur Lubricating Corp.; Far, Farval. Myers—Chassis Lubricating Co.

Tires—Auburn 13, custom models equipped with 17x6.50. *Hudson 132-in. wheel base models equipped with tires 17x6.50. Stutz 145-inch wheelbase models have 20x7.00 tires

PONTIAC SALES GAIN IN NEWARK DISTRICT

Newark, N. J., May 18.—Retail deliveries of new Pontiacs by retail stores in the district showed an increase of 55 per cent. for April over those for the preceding month, according to R. D. Chaplin, vice-president of the Bonnell-Mason Company, local distributors. This is pointed out as the beginning of an upward trend in car sales. Further indications of an upward movement are found in the increase of 65 per cent. for April in the sale of used cars. In addition to the deliveries during April, local branches entered May with unfilled orders higher than at any other time.

BOCK TAKES GRAHAM IN EAST ORANGE, N. J.

East Orange, N. J., May 18.—Appointment of the Bock Machine and Garage Company, 160-168 Main St., East Orange, as East Orange Graham dealer, was announced yesterday. Selection of the Bock organization was made personally by Joseph B. Graham, after a visit to the East Orange shops. The company is one of the oldest automobile concerns in New Jersey. It was founded forty-three years ago as a machine shop, and twenty-nine years ago began servicing "horseless carriages."

OHIO AUTOMOTIVE EMPLOYMENT OFF

Columbus, O., May 18 (UTPS).—Employment in the automobile and automotive industries of Ohio during April continued to decline, showing 4 per cent. less than in March, as contrasted with the five-year average March-to-April increase of 4 per cent., according to a recent report of the Bureau of Business Research of Ohio State University.

Compared with April of last year there was a 31 per cent. drop. Average employment during the first four months of the year was 26 below that of the same period in 1931.

SPARTON DEVELOPS "REPEALER" HORN

Pontiac, May 18.—Over the telegraph wires throughout Michigan today went this message from Muskegon: "Understand Sparton horn of Jackson, Mich., has perfected an automobile horn which says, "How Dry I am.' The horn is to be known as a 'repealer.'"

NATIONAL CONTROL OF OIL OUTPUT URGED BY AMES

(Continued from Page 1)

Supreme Court of Oklahoma, it must be controlled by the states.

"The Supreme Court has upheld various statutes involving this subject," Mr. Ames declared, adding, for example, that if legislation carefully is prepared for state control through unit operation of an entire oil pool, it is altogether possible that such legislation would be upheld by the high court.

"However, no state acting alone can adequately control production because no state has a monopoly of the oil," he continued. "No matter how effectively production may be controlled in Oklahoma or Texas or California or Kansas, unless similar control is exercised in the other states, the whole effort at control fails to accomplish its purpose. Adequate control, therefore, depends upon and requires co-operation of the principal oil-producing states."

Congressional consent is necessary for interstate control, the speaker explained, although he said the Federal Oil Conservation Board and an oil states advisory committee consisting of representatives from the ten principal oil-producing states are co-operating in seeking Congressional consent for an interstate compact.

Mr. Ames said that the demand for petroleum products may be measured months in advance, permitting the industry to produce accordingly. Committees of the Federal Oil Conservation Board and the American Petroleum Institute have been forecasting demand over periods of from six to nine months, he said.

"If we had an interstate compact authorizing the oil-producing states to co-operate with each other for the conservation of their oil and gas reserves," Mr. Ames continued, "this central agency would naturally be charged with the duty of forecasting demand and would, in co-operation with the Federal Oil Conservation Board, represent both the interests of the oil-producing states and the interests of the consuming public."

With demand and supply reckoned, Mr. Ames said the central agency, in which the producing states would be represented, would allocate to each state the proper amount it should produce, leaving to the state the method by which its quota would be apportioned between the various producing pools within its borders.

"In order for this plan to accomplish the desired results," he said, "it is, of course, necessary that the importation of crude oil and refined products should harmonize with the program applicable to domestic production."

Such a method of control of an exhaustible resource may possibly mean governmental interference with business, the speaker said, adding, however:

"Let those who oppose it make the most of it, but let them apply an intelligent test and not a mere blind prejudice."

MUNCIE PRODUCTS MOVES ITS ENGINEERING UNIT

Lansing, Mich., May 18.—Transfer of the engineering unit of the Muncie Products Corporation of Muncie, Ind., to the Oldsmobile plant in this city has been confirmed by I. J. Reuter, vice-president in charge of the Buick Oldsmobile-Pontiac amalgamation.

The transfer is part of the reorganization scheme which recently sent the Oldsmobile sales staff to Detroit and left vacant a large portion of the Oldsmobile administration building here.

John G. Woods, Oldsmobile chief engineer, who succeeded C. L. McCuen, has been general manager of the Muncie Products. He had been director of engineering of Oldsmobile until May, 1930, when he was sent to Muncie.

Included in the Muncie engineers who are moved to Lansing are Perry L. Tenney, Harry E. Fidler, Carroll K. Lenning, O. Rasmussen, William Eastman, Frank Blymer, Edwin McLean, H. R. Greenlee and K. C. Plasterer.

Production - - Engineering - - Factory

Continuous Gas Carburizing Furnace

By R. J. COWAN,
Metallurgical Engineer Surface Combustion Corporation.

Despite the growth of alloy steels and special means of surface hardening, the ancient art of carburizing steel remains one of the fundamental operations in the manufacture of machine parts. It retains its popularity because it enables the workman to start with a material that can easily be machined and ends with an excessively hard and desirable surface for resisting wear, retaining ductile metal underneath with sufficient strength to stand up to severe duty.

As is well known most carburizing is done by the time-honored method of packing the steel with carbonaceous materials in suitable containers, covering it in such a way as to prevent the infiltration of furnace gases, then raising the temperature to a suitably high point and holding it there for some hours, depending on the depth and character of the case desired. . . .

It has been felt for many years that this metallurgical process is too cumbersome and dirty to fit well with modern manufacturing practice. To those who have studied the matter it seemed that the desired improvement could be had in a process for carburizing with an externally prepared gaseous atmosphere. Such an atmosphere could be clean, of uniform composition, easily controlled, always fresh and theoretically desirable. . . .

After considerable research work and study in the laboratory of Surface Combustion Corporation, such a process has been worked out that has many interesting and attractive features. It is interesting, not only from the theoretical and scientific standpoints, but also because it lends itself so well to modern shop conditions.

A discussion of the gas reactions and other theoretical considerations has been given by the author to the American Institute of Mining and Metallurgical Engineers. The present article will consider the industrial applications, and will present some of the results that have been obtained by repeated tests, mentioning the chemistry of the process briefly in passing.

Essential details of the continuous gas carburizing process may be summarized briefly as follows:

A hydrocarbon gas, such as methane, ethane, propane or butane, is mixed with the products of combustion of a gas-fired furnace, the latter containing from 8 to 10 per cent. of carbon dioxide. These mixed gases are dried and introduced into a muffle containing work to be carburized, in such a manner that they will flow through the muffle in the same direction as the work. Rapid diffusion is prevented by suitable baffles throughout the muffle. The work is then moved progressively through three successive reaction zones of the furnace. In the first or preheat zone, the hydrocarbon gas begins to break down into its constituents, hydrogen and carbon, the exact temperature depending on the hydrocarbon used, but in any event is below 1450 deg. F., so that the work to be carburized soon becomes covered with a deposit of carbon. Carbon deposits on the surface of steel to be carburized rather than on the walls of the muffle through which it is passed, or the work carriers, since these are made of a certain class of heat-resisting alloys which will not catalyze the gas decomposition to any great extent. The presence of flue gas in the first zone of the furnace serves only as a desirable diluent for the rich carburizing gas.

As the work, now covered with carbon, moves along through the furnace it comes into the high temperature or carburization zone at approximately 1,650 degrees Fahrenheit, in which the carbon dioxide of the flue gas becomes active. In this zone the carbon dioxide reacts with carbon to form carbon monoxide, in accordance with the reversible chemical reaction $C + CO_2 = 2CO$. This means that carbon monoxide, which is known to be an active carburizing gas, is being formed progressively by carbon directly in contact with the metal surface to be carburized. It is important to note that in this middle zone there is always present, along with the carbon and its oxides and hydrogen, a certain amount of hydrocarbon gas that has not broken down completely (or at least there remains considerable methane, CH_4, which is the last stage of its decomposition). The presence of this hydrocarbon prevents the decarburization of the metal in the atmosphere, high in hydrogen, that surrounds it in this zone.

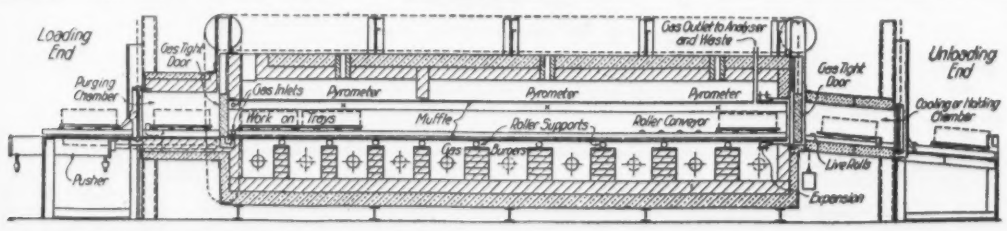
After spending the required time in passing through this high-temperature carburizing zone, the work enters the third, or diffusion zone, held at the same temperature. Here, also, there is a simple adjustment between methane and hydrogen and between carbon monoxide and carbon dioxide to produce an "inert" atmosphere, that is to say, one which prevents any decarburization of the exposed steel surfaces. By holding the metal in such an atmosphere, there is brought about a progressive diffusion of carbide from the case inward to the core, so necessary for a satisfactory adherent case.

Apparatus simple in operation and rugged in construction has also been developed. Its general design is shown in the accompanying drawing. It consists of a muffle chamber extending throughout the furnace length, ending at the charging end in a purging chamber, and at the discharging end in a cooling chamber. This discharge chamber can be arranged so it may be held at temperature, prior to quenching the freshly carburized parts without an intermediate reheating. Both of these small chambers are separated from the main body of the muffle by gate valves which make the muffle gas-tight. Doors at opposite ends, leading to the outside, have a machined edge which is held tightly against the slides by a cam or toggle.

Work is carried through on alloy grids or trays of sufficient rigidity to carry the load. The grids ride through the muffle on rails and rollers, the movement being actuated by a suitable pusher. The mixture of carburizing gases is introduced continuously at the correct rate at the charging end of the muffle, both above and below the work throughout the entire length of the muffle. Spent gases burn at the discharge end.

This furnace is heated by gas burners firing above and below the muffle. Temperature is controlled by automatic regulators and thermo couples placed at three different points in the muffle. A unit of this type will occupy about 40 per cent.

Continued on Page 11)



WORK LOADED ON TRAYS is pushed slowly through muffle, with "air locks" on each end. Carburizing gas enters with cool work and both progress through zones of rising temperature. Gas mixture is controlled by automatic analysis of exhaust at discharge end

THEFT-PROOF IGNITION WIRE CABLE

The Cuyahoga Spring Company has developed a new theft-proof ignition wire cable, which is made of two wires, one coiled over the other and interlocking, so that the tension exerted will not open the coils and permit tampering with the ignition wire.

The wire itself is described as being made of high carbon spring steel, which will not permit easy sawing or cutting.

Another product recently added by this company is a split bronze bushing or bearing, made to replace the cast or turned part. This unit is sold to distributors of automobile accessories.

ADVANCE KICK SHACKLE

The Advance Products Corporation has brought out a new kick shackle, which is a replacement spring shackle, attached to the left front spring. It is designed to eliminate road shocks through the steering wheel.

It is stated by the manufacturer that, through the installation of the kick shackle, the front axle is given a flexibility that permits it to ride with the road shock, which is absorbed by the shackle instead of being carried back through the steering wheel. Technically, this shock elimination from the steering wheel is accomplished through placing the left side of the front axle in a floating spring suspension, which allows it to ride with the jar. This spring suspension is only necessary on the left side, as it is this side that the drag link attaches to the steering knuckle on the axle.

The shackle, the manufacturers state, is made of high-grade malleable iron. Pin holes are bored true and bushed. The installation is simple, requiring not more than half an hour. No cutting or drilling or special tools are required. The shackle may be installed on any car having a 1¾-inch front spring.

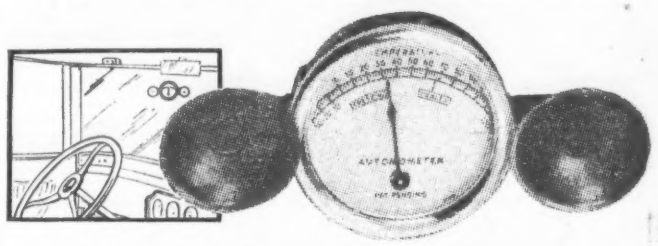
BAR-WAY UPHOLSTERY COVERS

The Hodes-Zink Manufacturing Company is putting out a new line of Bar-Way upholstery coverings. The emphasized feature of this is the fact that no pins, tacks or snaps are needed for installation. It is claimed that a complete set of these covers can be installed in forty minutes. The covers are offered in a selection of new patterns to harmonize with the interior of any car. They can be cleaned and kept looking like new.

ANCHOR BOLTS

The Rawlplug Company has a new line of Rawl anchors, which is described as being a heavy-duty, double - expanding, double - ended anchor for bolts. The unit is molded in one piece, collapses easily and seals the hole. The anchor is made of pure aluminum, which forms the double-cone body. Ductile aluminum collars seal the hole. The part has no top or bottom; it can be inserted at either end. An aluminum collar at the top and bottom is designed to prevent creeping or flow of lead when caulked or under load. The cone angle is designed to insure maximum expansion. The thin aluminum walls collapse immediately upon caulking.

Rochester Automometer



THE ROCHESTER MANUFACTURING COMPANY is placing on the market a new automometer, which gives the driver the outside temperature at a glance. The latest model of this instrument is one embodying a double pin construction at the back of the case, to make it possible to hook the thermometer in the upholstery above the windshield. The Model 510 has a black crystalline enamel case finish, chrome bezel ring and unbreakable crystal. It has double suction cups for installation on the outside of the windshield, and can also be used on a house window pane

Relative Wear of Metals Due to Abrasion

(Continued from Page 6)

wear value, compared with the Key steel aforementioned.

For example, an S. A. E. 1,040 steel, as received from the mill, showed a Brinell hardness of 156, and a wear value 1.235 times that of Key steel.

The determinations of the loss of weight were ascertained by measuring the loss in weight of the blocks being tested when lapped by 3,000 revolutions of the doughnut-shaped disk.

Naturally, there are many variables which have to be considered in actual practice. The data collected have been valuable as a guide in our selection of materials best adapted to serve a specific purpose.

Abrasion Test Values Heat Treating Steels

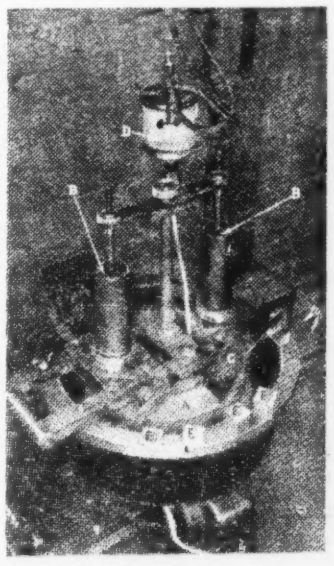
S.A.E. No.	Brinell	Treatment	Comparative Wear Value
1040	156	As received	1.235
	269	Oil quench, no draw	1.436
	269	Oil quench, 450 draw	1.410
	255	Oil quench, 800 draw	1.353
3130	183	As received	1.258
	460	Oil quench, no draw	1.637
	402	Oil quench, 600 draw	1.651
	321	Oil quench, 900 draw	1.363
	248	Oil quench, 1,200 draw	1.345
	477	Water quench, no draw	1.863
	311	Water quench, 1,000 draw	1.387
3135	444	Oil quench, 600 draw	1.602
	430	Oil quench, 700 draw	1.727
3140	196	As received	1.483
	532	Oil quench, no draw	1.901
	555	Oil quench, 450 draw	1.946
	444	Oil quench, 600 draw	1.627
	311	Oil quench, 900 draw	1.483
	340	Oil quench, 1,100 draw	1.577
2315	196	As received	1.393
	477	Oil quench, no draw	1.883
	418	Oil quench, 500 draw	1.692
	402	Oil quench, 700 draw	1.552
	321	Oil quench, 900 draw	1.485
	241	Oil quench, 1,100 draw	1.331
5135	170	Annealed	1.412
	555	Oil quench, 300 draw	2.029
	512	Oil quench, 400 draw	2.342
	495	Oil quench, 500 draw	1.869
	460	Oil quench, 700 draw	1.858
	364	Oil quench, 900 draw	1.639
	293	Oil quench, 1,100 draw	1.540
5140	163	Annealed	1.254
	600	Oil quench, 300 draw	2.375
	578	Oil quench, 400 draw	2.348
	555	Oil quench, 500 draw	2.192
	477	Oil quench, 700 draw	1.879
	387	Oil quench, 900 draw	1.788
	321	Oil quench, 1,100 draw	1.604
5150	217	Annealed	1.451
	627	Oil quench, 300 draw	2.490
	600	Oil quench, 400 draw	2.308
	555	Oil quench, 500 draw	2.163
	512	Oil quench, 700 draw	1.870
	418	Oil quench, 900 draw	1.700
	332	Oil quench, 1,100 draw	1.674
4130	187	Annealed	1.399
	600	Oil quench, 300 draw	2.305
	578	Oil quench, 400 draw	2.253
	555	Oil quench, 500 draw	1.988
	495	Oil quench, 700 draw	1.874
	444	Oil quench, 900 draw	1.782
	364	Oil quench, 1,100 draw	1.785
4650	170	Annealed	1.239
	627	Oil quench, 300 draw	2.416
	600	Oil quench, 400 draw	2.360
	555	Oil quench, 500 draw	1.980
	477	Oil quench, 700 draw	1.886
	387	Oil quench, 900 draw	1.767
	311	Oil quench, 1,100 draw	1.564
6150	202	Annealed	1.488
	652	Oil quench, 300 draw	2.428
	627	Oil quench, 400 draw	2.268
	600	Oil quench, 500 draw	2.106
	512	Oil quench, 700 draw	1.904
	418	Oil quench, 900 draw	1.807
	321	Oil quench, 1,100 draw	1.543
1350		Cast Steel	
	207	As cast and annealed	1.457
	460	Oil quench, no draw	1.963
	444	Oil quench, 600 draw	2.012
	321	Oil quench, 900 draw	1.625
	255	Oil quench, 1,100 draw	1.529
1025		Cast Steel	
	149	As cast and annealed	1.130

Case Hardening Steels

S.A.E. No.	Rockwell	Treatment	Comparative Wear Value
1020	63-C	Carburized, one reheat	2.130
	58-C	Carburized, no reheat	2,117
2320	64-C	Carburized, one reheat	2,012
	58-C	Carburized, no reheat	2,073
3120	65-C	Carburized, no reheat	2,044
	56-C	Carburized, one reheat	1.922
4615	56-C	Carburized, no reheat	2,117
	56-C	Carburized, one reheat	1.785
6115	65-C	Carburized, reheat	2.010
5120	60-C	Carburized, reheat oil quench	1.935
	65-C	Carburized, reheat water quench	2.400

Stainless Steels

			Comparative Wear Value
.30C—14.00 Cr.	241	As received	1.430
	627	Oil quench, no draw	2.074
	512	Oil quench, 600 draw	1.907
	477	Oil quench, 900 draw	2.028
	277	Oil quench—1,200 draw	2.028
	277	Oil quench, 1,200 draw	1.462
	241	Oil quench, 1,400 draw	1.391
.12C—13.00 Cr.	460	Oil quench, 300 draw	1.643
	418	Oil quench, 600 draw	1.598
	418	Oil quench, 800 draw	1.865
	387	Oil quench, 1,000 draw	1.774
	241	Oil quench, 1,200 draw	1.341



Miscellaneous Steel

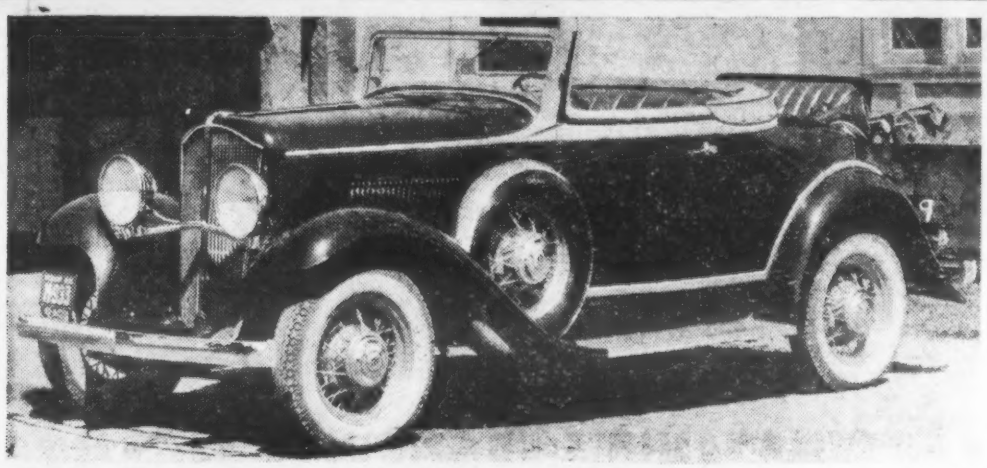
Sample	Comparative Wear Value
Hadfield manganese steel, cast, work hardened	2.352
Wrought iron	1.021
Armco iron	1.038

Cast Irons

Material and Treatment	Brinell		Comparative Wear Value
Malleable iron..none	120-140	Rim	1.017
		Core	.894
Promal	170-190		1.239
White chrome iron	...		1.495
Chilled iron	...		1.575
White or hard iron	380		1.804
Soft gray iron (annealed)	150		.303
Good gray iron	190		5.09

Bronzes

	Brinell	Comparative Wear Value
Aluminum Bronze—		
38% Copper	...	...
9% Aluminum	101	.776
3% Iron	...	...
Aluminum Bronze—		
90% Copper	...	...
10 Aluminum	...	.629
Phosphor bronze	52	378
Manganese bronze	107	.549



NEW DE VAUX 80, convertible type, with rumble seat and fixed windshield. The top folds snugly into the rear deck, as shown above

1,000 AT PLYMOUTH'S LARGEST SALES RALLY IN NEW YORK SECTOR

New York, May 18.—The largest meeting ever held by the Plymouth sales organization in the metropolitan district took place Monday night at the Pennsylvania Hotel, when Chrysler, Dodge, and De Soto dealers gathered to celebrate the approaching first anniversary of the introduction of floating power on Plymouth motor cars.

The meeting was one of a nation-wide series of similar meetings being held this week.

More than 1,000 dealers and members of their organization attended the dinner and meeting which was in charge of J. R. Lakin, Plymouth sales promotion supervisor for the New York district.

The principal speakers were Byron C. Foy, president of the De Soto Motor Corporation; E. B. Wilson, director of sales, Chrysler Sales Corporation; J. W. Hutchins, director of Plymouth sales, Dodge Brothers Corporation.

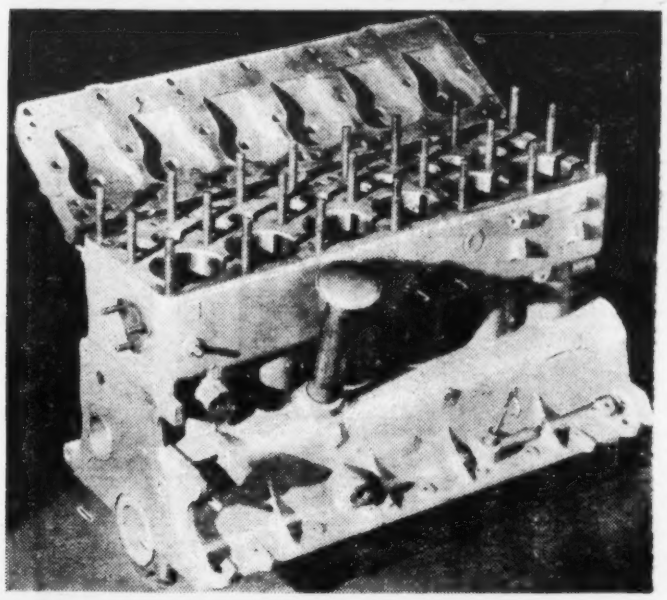
In the principal speech of the evening Byron C. Foy reviewed the progress made by Plymouth during the past year.

"We are proud of our accomplishment with Plymouth during the past twelve months, and are particularly enthusiastic over the record of the past few weeks since the announcement of the new, finer 1932 Plymouth," said Mr. Foy.

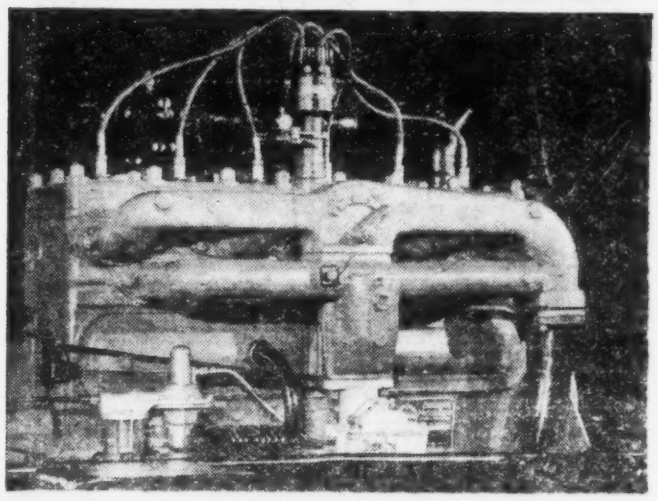
"Plymouth went into May with a large bank of unfilled orders and bright prospects for better business. The factory, since the announcement of the new models, has been running close to record operations, April being the biggest April in Plymouth history.

"For our part," he said, "we anticipate an increased sales trend through June and July. We will benefit from the good will built by Plymouth's last year's model. The reception of our cars has overshadowed 1931."

Increased schedules on all models necessitated by increased orders during the first two weeks in May, as well as strength in the seven-passenger sedan, adding to the line this year were cited. Original schedules on this model have been doubled since it was placed on the market.



A VIEW of the block of the new De Vaux 80 engine shows the contour of the combustion chambers. Cylinders are cast en bloc



THE MANIFOLDING on the new De Vaux 80 is eighty horse power engine is mounted on the right side, as shown above. The engine is equipped with gasoline pump and up-draft carburetor and crank-case ventilator.

Continuous Gas Carburizing Furnace

(Continued from Page 10)

of the floor space required by furnaces of equivalent tonnage.

Operation is as follows: A loaded grid is placed in the chamber at the charging end of the furnace. After the door is closed the furnace is purged; that is, the air if replaced with flue gas. When the inner doors or valves at both ends of the muffle are raised simultaneously, the pusher shoves the load into the furnace and (assuming that the muffle has been filled) a corresponding load is pushed out into the cooling or holding chamber. After lowering the inner doors, the finished load may be removed when it has cooled sufficiently or it may be held at the quenching temperature.

We believe that for the first time in the history of carburizing this process offers to industry a method of controlling the type of case to be produced on the surface of the steel. This control is exercised by regulating the proportion of hydrocarbon gas and flue gas used for the carburizing mixture. Changes in the relative amount of these two gases are reflected directly in the type of case prdouced whether a low carbon hypereutectoid case, a higher carbon eutectoid case or a hypereutectoid case with still higher carbon.

We withdraw from the outlet end of the muffle a small amount of gas for analysis that has passed through the carburizing reactions. By means of a special method of analysis for carbon dioxide and methane made with automatic and recording equipment the operator knows at all times what the exact carburizing conditions are within the furnace proper and is able to detect at once any changes that may have taken place due to mechanical difficulties or other causes. This chart is similar to the well-known pyrometer record. Such a record of carburizing conditions taken continuously from the carburizing chamber reveals what is going on and offers a means of control never before realized.

It has therefore been possible to produce finished parts of very fine uniformity, not only within the piece itself, but from piece to piece throughout an extended run. This is illustrated by three micrographs of typical cases produced during a long test on this furnace. Each one of each lot was so nearly like its fellows as to be almost indistinguishable, the only difference noted in depth of case being due to fine grain in the steel, but only amounting to 0.002 in. even from this cause.

Rate of carburizing is high. We found that a case penetration of 0.045 in. could be obtained in 3 hours at a temperature of 1675 deg. F. with S. A. E. 2315 steel (about three times the susual carburizing rate of pack carburizing).

Diffusion between case and core has been found to be uniform and gradual, regardless of the amount of carbon in the case, indicating that there is a good bond between the two. The usual sharp line of demarcation, so common where carbon monoxide alone has been used as the carburizing agent, is absent.

Attention must be called also to the fact that the process is clean. By proper regulation of the ratios of the carburizing gases, it is possible to bring the work from the furnace without any free carbon on it, clean and in condition for the next operation. There is no packing of boxes, nor handling of hot, dusty compound, since the carburizing medium is wholly gaseous.

This contribution to the science of carburizing is making a strong appeal to the industry, and one large commercial installation is in operation at the Newcastle plant of Chrysler Corporation and others are under construction. It is hoped that it will prove to be of real assistance in the scientific heat treatment of steel.

Co-ordinates Direct-by-Mail With Newspaper Adverising

(Continued from Page 3)

tractive colors—no trouble or expense for at least a year?

"we can use your present ford now and make you a very liberal allowance for it. We can put it in good condition for a lot less than you can. We have customers waiting to buy good used fords now.

"come to (address), call for mr. budd—appraisal will be made quickly, delivery when you want it. name your terms. Let Budd fix it.

"you know us—we traded for a horse. budd motors, inc."

The reference to trading for a horse has to do with a case in which Mr. Lamontagne accepted one of the equine species as part payment for a truck. He allowed $125 for the horse, rode it for two months, then sold it for $125.

In addition to breaking even on the deal and getting a number of rides, the dealer secured considerable valuable publicity. He capitalized on the transaction by using in a newspaper advertisement a photograph of the horse and truck, under the caption: "One of our recent trades. What have you?"

Green is the key color of the Budd Motors business. The entire interior of the dealership building at 65 Cook Ave., Meriden, is painted a light green, and all promotion material is printed in the same tint. Even the typewriter ribbons are green. The effect is pleasing because of the lightness of the color and the uniformity.

REPORTS GAIN IN ORDERS

Newark, N. J., May 18.—Paul E. Heller, president of Heller Brothers, manufacturers of rasps, tools and steel products, reports that there has been some spurt in orders during the last few weeks and that sales of the firm's various items show a slight increase over a year ago. The standard lines of rasps have been moving steadily, and Mr. Heller predicts that within a few weeks plant activities will be increased, due to orders which are expected to materialize.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

The New

SALES *and* SERVICE MANUAL *for* 1932

will be off the press in a few days!

Bigger than ever—and complete with a wonderful supply of new information, the *1932 Automotive Daily News Sales and Service Manual* will soon be ready to give you more help this year than it has ever given you before.

New passenger and commercial car registrations by months, makes and states for all of 1931, as well as comparative figures as far back as 1927. Detailed charts of passenger car equipment and accessories—major specifications and mechanical details of passenger and commercial car models! Also, a brand new chart showing the first twelve leading makes in the ranks of passenger and commercial car manufacturers by makes and months—and much more that you will find absolutely invaluable.

Not a day passes without hundreds of urgent calls from dealers all over the country—each one with the same question: "When will that new manual of yours be out?"

Well, here it is! And it's yours FREE with a year's subscription for *Automotive Daily News* at the regular subscription price of $12.00. Or if you prefer buying it alone, just inclose $2.50 with the coupon below.

But by all means, get your order in at once, because this new manual is being printed in a very limited edition, with positively no reprints!

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Kindly enter my subscription for one year of Automotive Daily News and send me absolutely free your new Sales and Service Manual for 1932. Inclosed find check for $12.00.

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Send me at once your new Sales and Service Manual for 1932 for which I inclose $2.50. (Check choice.)

NAME .....

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$2.50 alone

ACT NOW · A COMPANION FRANCHISE *MEANS*

IMMEDIATE PROFITS AND YOUR SALVATION THIS FALL AND WINTER

WHEN you are in there fighting for your share . . . and STILL sales thin out . . . then it's high time you did something in a hurry.

We offer you the franchise for the New De Vaux 80 — as a companion car to your present line.

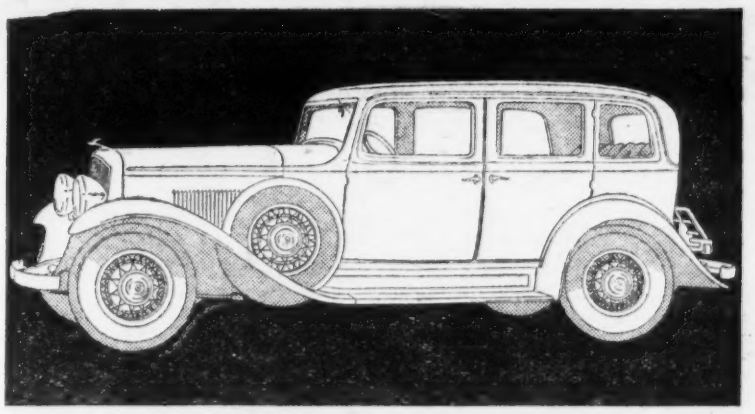
You can put this smart, low-priced merchandise on your floors with slight increase in overhead. You need but little capital to make a profit on the franchise. (Dealers' books bear us out.)

Many of the wise leaders in the motor car business (list on request) have recently added De Vaux

— To get down into the biggest selling market.

— To sell to the 96% who now buy cars priced under $1000.

— To have something desirable for the prospect whose income has been sharply reduced.



CONTINENTAL

DE VAUX 80

BUILT BY CONTINENTAL — POWERED BY CONTINENTAL

PRICES START AT $725 f. o. b. factory

We invite your immediate inquiry. Remember—right now "you can't sell what you haven't got." And Winter is coming along!

R. H. MULCH, General Sales Manager,
Continental-De Vaux Company,
Grand Rapids, Michigan

Dear Sir: Send me complete details regarding the 1932 De Vaux Franchise.

*Name*_____

*Address*_____

*Now Handling*_____

ADV-20